THE

# AMERICAN FARMER:

DEVOTED TO

## Agriculture, Horticulture, and Rural Economy.

[ESTABLISHED 1819.]

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

Sixth Series. BALTIMORE, OCTOBER, 1867. Vol. II.—No. 4.

### OCTOBER.

"Thine, Autumn, is unwelcome lore—
To tell the world its pomp is o'er;
To whisper in the rose's ear,
That all her beauty is no more.

"The lily's sword is broken now,
That was so bright and keen before—
And not a blast can blow, but strews
With leaf of gold, the earth's dark floor."

### Editorial Gossip from the Farm.

*Weather, Potato Rot, Grapes, Cheval Gras, &c.*

DEAR FARMER: It was said long ago of us country people, "their talk is of bullocks;" let it be acknowledged, that our thoughts are now raised above the old theme, when we have them always on the clouds, or on the sunshine as it occasionally peers through them. "Wet weather, sir." "A foggy morning, sir." "Very hot sun to-day." So we greet one another, and so it is, up to how late in September, we do not now say. The corn gets the good of it, at any rate, and is doing better than we hoped last month. The ears are filling out finely.

Bad news comes from various quarters of rotting potatoes. I get no damage as yet. A small planting of Harrison's, planted about first of May, have come out sound and beautiful, and the ground cleared of them by the first of September, and yielding at the rate of twenty to one. Early Goodrich, not so productive, but the same result otherwise. Peach Blows planted two weeks sooner are green and growing still. A very intelligent French experimentalist writes lately, that he can, with certainty, protect his potatoes against rot, by planting in February, and opinion here has been always favourable to early planting in this regard, but the objection to it is the poor turn-out. These Harrison's, Goodrich's, and others, may allow of the earliest planting, and still give very productive crops. Ours could as well have been planted on the first of March as of May, and been off the ground by first of August, giving place to turnips or any fall or winter crop. We will bear in mind, however, that this season is exceptional; it is not often there is one so favourable throughout to the growth of this crop, but if these new potatoes shall give us respectable early crops, safe from rot, Mr. Goodrich will have proved himself, indeed, a benefactor.

Of grapes, let it be said that notwithstanding hot suns and continued moisture, the Concords are ripening with very little loss. Mr. William Griffith, whose article is found on another page, claims that his Lake Shore region is the Canaan of grape growers, where Delawares, Ionas, and all the better sort, shall gladden the hearts of the happy who dwell there, while only Concords and the baser kind shall comfort the Egyptians. We do not give up to him this point, and do not, of course, give up the Delaware or Iona. Catawba is a dead failure, dropping its leaves, and leaving the fruit all green. Of Adirondac, and Salem, and others, we will say more some time hence, but in the meantime, while there is no worse plague in Egypt than a bunch of Concords, well ripened in Maryland soil by Maryland sun, we are likely to linger by her flesh pots—more especially as so many other Egyptians have the same poor taste, and are willing to buy at a paying price, and we are *sure* to have a plenty to sell.

Speaking of taste, how submissive we are to

habit, or rather to our notions or prejudices. Great objection is made to swine's flesh, because it is said the hog is an unclean animal, and truth to say, he is not always so nice as he might be, but has excellent capabilities in the way of ham, sausage, &c., but what say our squeamish friends to horseflesh? Don't turn up your nose, good sir. There's never a cleaner animal surely. But your mental associations suggest that unpleasant carcass left by the roadside, and so your nose settles the question and not yourself. But Frenchmen rise above such weakness. *Cheval* is an article of diet in France. *Chevaux gras* contribute tons of wholesome food to her labouring people, who have been taught to eat it by French *savans*.

A writer, giving an account of several cattle shows he had visited, says: "*Il nous reste a parler de l'exposition des chevaux gras.*" At the town of Nancy, it seems, among the other attractions, was a competition of fat horses destined for the butcher. "M. Pincaud, the butcher of Nancy, was the exhibitor of the filly, twenty-seven months old, weighing 8 cwt., and of the thirteen year old horse, weighing nearly 11 cwt.; both of which were paraded about decked with garlands and flowers."

In Paris, we are told, there are now fifteen butcher shops for the sale of horseflesh; four restaurants, where it undergoes scientific culinary treatment, which the public much appreciates; and five sausage shops, whose specialty is often better than the common sausages, though sold at half price. So many shops are opening that it is feared the supply will become irregular, and that, consequently, the price will rise. The Provinces have followed the example of the capital, and the trade in horseflesh has sprung up to such an extent, that men go about buying horses for the butcher markets. It is looked upon not only as a most valuable addition to the meat supply of the country, but as adding materially to the value of agricultural products, since a "done" horse, or as we should say, a "used up" horse, that is, one healthy and sound in other respects, but damaged in his feet or legs, is increased in value many fold, so that t is said a horse, useless from age or accident, which sold formerly at seven francs, will now bring at the butcher's one hundred francs.

Lest it may be thought, that I am riding the *cheval* too long considering the state of his legs, I hand him over to the digestion of the reader, only claiming that when he sits down to a dinner of *pony*, I may be there "to see."

Yours truly, &c.

## Farm Work for the Month.

### TOBACCO CROP.

Our notes for the past months give all the necessary directions up to this time. If they have been attended to, there is little to be done—but press forward and close up the labor of housing by the 10th. Look carefully to the hanging in the house. Let it not be put so close, but that each plant will hang clear of the other when it has wilted. When damp nights with foggy mornings occur, close the doors at sundown and open at sunrise; also in all rainy or damp weather, and in high winds, which beat and whip the leaves about. If a hard frost is expected after housing, shut up the house at night to prevent freezing of the uncured stems.

### CORN FIELD.

As the corn field will now be peculiarly liable to the inroads of unruly stock, let it be properly guarded, the fences and gates looked to, and frequent inspection given the field generally. If fodder has been secured by cutting tops and pulling blades, let all be put away safely as soon as practicable, where it is to be preserved for the winter. Corn should not be put in the house until well cured, and this will not be till November.

### WHEAT SOWING.

If our suggestions of last month were observed we hope that the necessary preparations, at least, for wheat sowing, have been made, and we are now ready, with the utmost promptness, to commit the seed to the earth. If sowing be delayed for fear of fly till the 5th of October, that should be the latest day, and then all should be ready to finish this important work at once. We are continually, and more and more impressed with the necessity of early seeding, if we would secure maximum crops. There is, indeed, liability to fly, and we may use the precaution of waiting till the date above named to avoid the Fall attack. But let it be borne in mind that against the Spring fly, and every other enemy or disease, a full supply of vigorous roots, which can only come by early seeding, is the best and only safeguard.

### TIMOTHY.

Timothy may be sown whenever you sow wheat. Let it follow immediately after the putting in of that crop, and follow it with the roller to insure prompt germination. A peck of good seed to the acre is sufficient.

IRISH POTATOES.

The late crop of these should be secured, if possible, when the ground is dry, and not before the latter part of the month. The digging is tedious work, and throwing out with the ordinary plough an imperfect operation. The potato ploughs now in use are, some of them, very good implements, and will be paid for in digging an acre of this crop.

FEEDING HOGS.

We lose much valuable time in feeding by delaying too long to pen our hogs that are to be fattened. The mild weather of early Fall is peculiarly favorable to putting on fat, and the sooner such hogs as are intended for the pen are put in a course of improvement, the more economically they will be fed. A gradual change from the range in field and forest is better than a sudden shutting up with full feed. They should be brought, therefore, within a small enclosure and fed moderately till they become accustomed to the change, when their supplies may be increased till they get as much as they will eat.

If we would not consult the strictest economy, but make the best meat, the fattening should be completed in a small grass lot with a running stream, or other abundant supply of water, and a shelter open to the South, where they may be always dry. There is very great economy in the use of well ground grain, and cooking increases the value of the food very much. If, in addition to this, every pair be put into a sty, raised from the ground and well protected from weather, the strictest suggestions of economy will be observed. In this case the bottom of the pen should be open enough to let all the droppings pass freely through to litter supplied underneath.

CATTLE FEEDING.

The same general principles are, of course, to be observed in the feeding of cattle for the butcher. Let it, therefore, be begun early, and continued moderately, with constant attention to the comfort of the animal in bad weather. Cows and store cattle should be provided with shelter, and protected properly at night and during rains. Give them full opportunity to lay on a Winter's store of flesh and fat. An animal that goes into Winter quarters in fine condition, is already half wintered.

PUMPKINS.

The crop of pumpkins should now be gathered and stored carefully in a sheltered place, where they may be convenient for feeding. They make very good food for milch cows in Autumn, adding to the quantity and quality of the milk.

## The Vegetable Garden.

Prepared for the American Farmer, by DANIEL BARKER, Maryland Agricultural College.

### OCTOBER.

The decline of such crops as late peas, beans, cabbage, cauliflower, corn, &c., should be followed by their immediate removal, and no decaying or useless matter of any kind should be allowed to decay and rot upon the ground. All vacant lots and spaces which are not required for immediate cropping, should be spaded or ploughed for exposure to the ameliorating influence of the weather. The application of manure should be governed by a consideration of the late and future crops. The lot assigne for onions the late spring, will probably hav received sufficient without further assistance for a crop of cabbage. Peas and beans impoverish the land as much as most crops, and that part of the garden occupied by them will require a good coat of barn-yard manure, and might be appropriated to early potatoes next spring; make it a rule never to let any vegetable matter of any kind go to waste. A convenient place for such things may be found outside the garden, where all refuse should be taken, and a sprinkling of ashes or charred refuse should be placed over each layer, by which a valuable manure heap may be formed.

ASPARAGUS.—The stems should be removed, and an adequate quantity of seed collected for the yearly sowing.

BROCCOLI, about the end of the month, should be taken up and laid in by the roots, in a horizontal position, in some sheltered place; this will not only protect it from frost, but check luxuriant growth, and enable it to withstand the winter.

CAULIFLOWERS just heading are easily damaged by frost. Go over them frequently and tie the leaves over the advancing heads. A portion of the less forward may be taken up, and treated as recommended for broccoli. Continue to prick out young plants, and gradually harden off those which may have required protection. Plant out in frames to stand the winter.

CABBAGE PLANTATIONS may yet be made of the strongest from those pricked out last month, and draw some earth to the stems of advancing crops. Plant out in beds upon sheltered borders and beds, but use no protection until severe frosts. To protect cabbage and cauliflowers

from the ravages of the slugs, dust the ground between the plants every few days with coal, soot, or quick-lime. Keep the ground between the rows of growing crops constantly stirred with the hoe or cultivator.

CARROTS, as soon as their growth is completed, should be taken up and stored away for use.

COLEWORTS, BORECCOLE, or GERMAN GREENS.—Seed may still be sown for Spring greens.

CELERY.—Continue to earth up growing crops. Towards the end of the month the principal part may be taken up, and put in trenches about two-thirds deep as the plants are long, packing closely, and leaving the tops exposed until severe weather.

CORN.—Save seed from the best kinds and store away from the ravages of rats and mice.

CUCUMBERS.—Pick every day those large enough for pickles.

ENDIVE.—Continue to plant out in frames and blanch those heads required for use by gathering the leaves together and inverting a flower pot over the plant.

LETTUCE.—Plant out in warm borders where they may receive protection during severe weather—also upon the South side of ridges laid up about six inches from the natural level. Those in frames should be constantly looked over, and kept free from weeds, decayed leaves, and if slugs are troublesome dust the ground with fresh lime. Where the accommodation can be afforded, a quantity may yet be planted in frames, which will insure a regular supply, independent of the weather.

ONIONS.—Continue to look over those that are stored for Winter use, and remove any that are beginning to decay.

PARSNIPS should now be taken up, and stored for Winter use, but this is not necessary if there is not convenience for doing it, as they will keep as well in the ground, and will be all the better for frost, only always have some ready for use in the event of the ground becoming bound by frost.

POTATOES.—Dig and store before frost sets in. Those which have been taken up and stored should be looked over and sorted; one rotten potato will very soon infect half a dozen.

RHUBARB.—Remove the leaves from the plank intended for forcing, and keep the crowns free from weeds and slugs. Some roots may be taken up and planted in boxes, placing them in any warm cellar where there are not other conveniences for forcing.

RADISHES.—Make a sowing the beginning of the month, which, if the weather does not set in early, may prove useful.

SPINACH.—Keep it well thinned and the ground well hoed and cultivated whenever the weather is favorable. In picking the leaves of Winter Spinach, care should be taken not to bruise or otherwise injure those that remain, as at this season a bruise will invariably lead to decay. Every leaf should be picked singly.

TOMATOES, in late situations, where they are just ripening, should be picked off and ripened in some warm place, as the least frost is fatal to them. Continue to make a good supply of catsup while the fruit is abundant.

SWEET POTATOES should be taken up as soon as the tops are killed by frost. After digging let them be well dried in the sun, carefully handled, and pack for Winter use in dry cut straw or cut chaff.

TURNIPS should be taken up and stored for Winter use, upon the approach of severe frost.

SALSIFY AND SCORZONERA will now be fit to take up for storing. A portion may be left in the ground during the Winter, as the frost will not damage it, and it will be more firm and sweet for Spring use.

Take every advantage to collect together prunings of trees, roots, large weeds, &c.; place them together and cover with earth, so as partly to char, and burn the remainder to ashes. To this heap should be brought all the weeds, &c., collected in the garden and surrounding grounds. There is nothing settles such things so well as burning them. Upon this may be placed sawdust and refuse from the wood yard, which will become charred. Such a heap will be most valuable for mixing with earth for potting plants, dressing the surface of beds for small seeds, &c.

A curious discovery is said to have been made in France regarding the influence of iron on vegetables. On the chalky shores, where there is an absence of iron, vegetation has a sere and withered appearance, which, it appears, is removed by the application of a solution of the sulphate of iron. Harricot beans, watered with this substance, acquired an additional weight of sixty per cent. Mulberries, Peaches, Pears, Grape Vines and Wheat, derive advantages from the same treatment. In the cultivation of Clover, wonderful advantages have been gained by the application of the sulphate of iron on soils where it is desired to produce an early crop.—What becomes of all the scales which fall from the anvils in this our land?

## The Fruit Garden.

The principal operations in this department will be picking and storing fruit whenever it is in proper condition to do so; making preparations for filling up vacant places in the orchard and fruit garden. The preparation of ground for the reception of currants, gooseberries, strawberries, &c., should be completed as soon as possible. The formation of borders for grape vines should be proceeded with, and stagnant water must be carried off by drains. A stratum of stones should always intervene between the soil of the border and a cold, adhesive bottom. Although these precautions may not be strictly necessary in all cases, there are but few instances where they can, with propriety, be dispensed with. In planting odd trees between old established ones, a hole of considerable dimensions should be made for the young tree, and refilled with new and fresh compost. In the preparation of soil for fruit trees we always endeavor to keep it as dry as possible, and choose a *dry day* for planting, in order that the soil may be in a favorable state for the growth of new roots during the Fall.

The present time is very favorable for relifting and root pruning such fruit trees as are too luxuriant, and require checking to produce a fruitful habit. In root pruning we prefer to lift the tree entirely, unless too large, to cutting off the roots as they stand. After shortening the roots proportionately to the growth of the tree, we spread them out carefully near the surface, and fill in with the fresh compost, on which is spread a mulching of partly decayed barn yard manure to prevent frost from penetrating the ground.

As time permits, haul out rotten dung ready to go between the rows of strawberries, &c.—Whenever the dryness of the ground prevents lifting and transplanting, much may be done in pruning and thinning the tops, both of trees to be transplanted and of those which are permanently established. It will be found to be much more pleasant to do this now than in the depth of Winter—and it will, by the admission of light and air, tell much upon the fruitfulness of the tree, and quality of the fruit for years to come. Currants on wire or wooden trellises should now be well pruned in. Trained in this way they soon become full of fruit buds, and bear immensely in little room, and are easily protected from birds, &c.

Strawberries.—Continue to clean the beds and slightly stir the surface, and where new plantations are not completed, it should be done with as little delay as possible. Those that have been potted for forcing, should be kept in a sheltered situation to insure their not being too much saturated with wet. Strong pricked out plants may still be potted with good success. Look well to the fruit room, and keep it cool and airy—examine the fruit frequently and pick out all that are decaying. In a well ordered fruit garden every kind of fruit should have its department, and instead of being, as they often are, a row of trees of all sorts and kinds, mixed up in the most heterogeneous manner, no mixture should be allowed; every kind should have its allotted place. Thus, pears on the quince stock; the same on the pear stock; apples on the paradise stock; the same on the wild apple stock; morello cherries on the mahaleb stock, to be grown as pyramids, the best of all methods. The various kinds of duke cherries on the same stock; heart and biggareau cherries on the common cherry stock. Plumbs whether as bushes, pyramids, &c., should all be separated and planted by themselves, and not planted without regard to system or order, as they have been and continue to be, in many places where planting is being done. When our minds become turned to improved fruit tree culture, we shall see all this, and our fruit gardens will then become patterns of order, system and profit. Fruit trees grown in pots should now be taken up from the borders where they have been plunged, the roots which have protruded through the bottom of the pots cut off, the branches properly pruned and trimmed, and the pots stowed away in their winter quarters—previous to which we prefer to give each tree a top dressing, rather than to defer it until Spring. The compost we use for the purpose, and which has answered our warmest anticipations, is rotten, or nearly rotten barn yard manure, chopped up into small pieces and well saturated with strong liquid manure for two or three days, and then used. From two to three inches of this top dressing will be amply sufficient. Form into a neat, shallow basin, the tree in the centre, so that the applications of water given may be retained. To every one of our friends who has a garden, however small it may be, we would say, at this season of the year plant fruit trees—apples, pears, peaches and all the small fruits in as great variety as practicable. If only space for one tree, or one dozen strawberry plants, plant them. The very variety of fruit at our tables expands alike our desires, our minds, and our hearts, and tend to raise us in the scale of civilization. The man with so few wants that nature alone will supply them, whatever peculiar excellencies he possesses, can, as a man, be little better than a barbarian. We

say nothing against the man—quite the reverse—who, well aware of the benefits and the pleasures from variety of food, voluntarily deprives himself of that gratification, in order that, by his self-denial and self-effort, he may obtain a desired object. But it will be more than we can accomplish to make the world believe that Concord grapes are no better than the wildings of the wood, or the improved varieties of apples and pears, than those grown in our gardens fifty years ago. The great Creator, in his merciful goodness, has presented us with a wonderful variety of the useful and beautiful, that we may *thankfully* and *temperately* enjoy them all.

Those who are contented with the most common fruits, when their means would command all the most select and desirable, can only secure our respect, when we know the means thus saved are devoted to some noble purpose, such as helping those who, in this, our day, are in so much need of help.

McCORMICK'S REAPER IN FRANCE.—By invitation from the Emperor Napoleon a private exhibition of the working of McCormick's reaping machine was made recently on the Imperial farm near Chalons, at which the Emperor was present, accompanied by Marshal Niel, Gen. Le Bœuf, and M. Tiperaud, Director-General of the Imperial Agricultural Estates.

The trial was a complete success, and gave so much satisfaction to the Emperor that he immediately gave orders for the purchase of three of the machines for use on his private farms, and earnestly expressed the intention of encouraging the adoption of the invention throughout France on account of its great labor-saving properties, and said that he would set the example by putting it into operation on all imperial farms.

Such distinguished attention as this has been shown to no other foreign exhibitor, and it is considered certain that to Mr. McCormick will be awarded the highest honors of the International Exposition.

COAL SCREENINGS FOR MULCHING FRUIT TREES. Coal screenings, or slack, is very much used in some places, as a mulch for fruit trees of all kinds. Straw and hay, etc., soon decay, but coal-slack will endure for many years, and being a non-conductor of heat, it keeps the soil warm in Winter and cool in Summer. It prevents the growth of weeds, keeps the soil from becoming baked, and also acts as a fertilizer of considerable power. Coal ashes and small cinders may also be used for a similar purpose with good effect.

## The Flower Garden.

COLD FRAMES.—Upon the appearance of hard frost, the earliest opportunity should be taken to remove carnations, pinks, picotees, with other half hardy plants to their winter quarters. Cold, dry frames, raised a few inches upon blocks, to give a circulation of air beneath and among the plants, is one of the best situations for them, but very little water should be given such plants during the winter season, just sufficient to keep them from wilting; during every fair day additional air should be given by tilting up or removing the sashes entirely. Upon the approach of severe weather, the vacancies around the frame should be filled up, and a moderate degree of protection given. But during a greater portion of the winter no covering will be required, as the plants will bear to be frozen without injury, if the lights are covered sufficiently to keep out the sun rays, when they will thaw gradually and slowly.

Bulbs, of all kinds, should now be planted in beds and borders. Pot Hyacinths, Tulips, Narcissus, Crocus, and Snowdrops, in succession, so as to prolong the season of blooming.

Carnations and Picotees, not yet rooted from layers, must be taken off the stools and planted under glasses; those, with a few fibres, may be potted; having made some root, they will soon gain strength. The good old fashion clove carnation may be propagated to any extent, from cuttings in the spring. Carnations will often be found infested with green fly during the close weather, at this time of the year, in which case fumigate with tobacco, at once, and again in a few days afterwards, when they will probably remain clean till they commence to grow again in the spring.

Chrysanthemums should be looked to so that they may have a fair chance of making a good bloom; give them clear liquid manure, and tie them up securely, as their blossoms being heavy often weigh down their stems, or cause small stalks to snap with a gale of wind. Those grown in pots do not put into the house, so long as they are safe from frost, except any that may be required to bloom early.

Cyclamens—these beautiful spring flowering plants should now be taken into the house, and have every encouragement to grow for bloom, keeping them near the light as possible.

Fuchsias are blooming most beautifully since the change from warm, to moist, moderate weather. They may be kept in bloom until very late in the season, by keeping them close.

Plants going out of bloom should be kept exposed to the sun until danger of hard frost, and left unpruned till the time for taking them in doors, then cut them in slightly and place them in any moderately dry place, either light or dark, until they commence to grow next spring.

Revise the whole stock of plants in pots as opportunities offer, remove worms from pots, and renew the drainage where it has got stopped up, and prepare for the casualties of winter. Greenhouse plants that have been standing out should now be taken into the house.

Deciduous trees should now be planted. In planting them we do not wait for the falling of the leaf, we take them up and dispose of them as required; the transplanting will do them more good than harm. Forest trees, ornamented shrubs, roses, and all such things, should be procured and planted at once, and from this time every day gained is a real gain for the future well-doing of the trees, which, if the weather continue warm, will commence to make roots immediately. But it may grow cooler any day, and the longer planting is delayed the longer will it require for the trees to make fresh roots, on which their success next year will depend. Never plant when the ground is in a very wet state, if it does not come to pieces readily, wait a few days. Meanwhile see that the roots of the trees do not suffer by sunshine or drying winds.

Evergreen shrubs may yet be planted, when, if the earth continue warm, and the air moist, they will make fresh roots at once. This is also the best time to make alterations in flower gardens, shrubberies, &c. Not the least occasion as we have said, for the trees to be quite at rest before removing them. If they are still growing, and are to be removed, the sooner they are lifted the better, if only to put a stop to their activities.

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To Keep Tires on Wheels.—Hear a practical man on the subject: I ironed a wagon some years ago for my own use; before putting on the tires I filled the felloes with linseed oil; and the tires have worn out and were never loose.—My method is as follows: I use a long cast iron heater, made for the purpose; the oil is brought to a boiling heat, the wheel is placed on a stick, so as to hing in the oil, each felloe an hour.—The timber should be dry, as green timber will not take the oil. Care should be taken that the oil is not made hotter than a boiling heat, or the timber will be burned. Timber filled with oil is not susceptible to injury by water, and is rendered much more durable by this process.

## Planting Asparagus in the Fall.

Among the many valuable ideas for which we have vanity enough to think the horticulturist is indebted to the *Gardener's Monthly* transplanting trees just before, instead of after the leaves fall, stands prominent. This is but "Fall planting." November setting out is really winter planting.

Every year as we note observations and make experiments, we can see that this early Fall practice will yet be applied to many valuable purposes we now have little idea of. Within the past two years we have watched experiments made by several gentlemen on planting Asparagus in August, and the result is a remarkable success.

The ground is prepared as for a crop at any other season, and after cutting off the green tops of the young seedlings the roots are set precisely as in Spring planting. They push new roots at once, and make eyes so strong that even from one year old seedlings, some Asparagus—but not, of course, very strong—has been cut the following Spring,—and where two year old roots have been used, a full crop has been cut in the same time—a result no one expects from Spring planting.

In this region the plan has taken strong hold of gardeners, and Asparagus planting is likely to take rank at once with the Strawberry as a regular August operation.

It will, of course, be best in such cases to cover the beds, after they have once become frozen, with some kind of litter, not to keep out frost, but to prevent thawing and freezing until the natural Spring season comes; or the plants may be thrown out.

The same is true of Rhubarb and many root plants. If put in early so as to have time to put out a few fibres before winter comes they will push out very strong next year and a season of growth is saved thereby.—*Gard. Month.*

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☞Dr. Trimble stated before the New York Farmers' Club that since the introduction of the English sparrow, the canker worm in New Haven and in other places has disappeared; also that the worm has another enemy, a parasite, so small as only to be seen by the glass, that lays its minute eggs in the eggs of the canker-worm. Others ascribed the decrease of the canker-worm to the cold winds and rains of the past Spring, which occurred after the eggs commenced hatching.

For the "American Farmer."

## Surface Manuring.

CLIFTON, Fairfax Co., Va., Aug. 22, 1867.

*Messrs. Editors:*

Rainy days, I think, are not only an improvement to the farm, but also to the farmer's mind. At least I, whenever such a day makes its appearance, am always tempted to pay particular attention to the spiritual part of our business, reading over my agricultural journals and books. Doing so to-day, as it is raining, I came across the July number of the "Farmer" from 1866, and found a decidedly able written article on "Surface Manuring," although I cannot endorse it fully. I remember now distinctly that, when I read the article, more than a year ago, I felt tempted to make some remarks, and not having done it then, I determined, at once, to do it now. Before advocating "surface manuring," a thing important for some sections of the country, but dangerous for others, all the advantages and disadvantages, in regard to location, climate atmospherical influences, ought to be well considered and set forth to the public. The statement in the article, that surface manuring is practiced to a great extent in England, proves the correctness of my remark in regard to atmosphere, as the air of England is naturally very moist. If you go to the interior of France and Germany, you will find surface manuring mostly confined to meadows. We must not forget to bear in mind, that our climate is entirely different from that of the old country in general, our soil being subject to a hot sun, severe droughts, and torrents of rain not known in Europe. It is with "surface manuring" as with most everything in farming, it is subject to modifications, according to different agencies acting differently under peculiar circumstances present at the different sections of the country. The advocates of surface manuring will mostly be found to reside near coasts of large bodies of water, or in such sections of the country where the air is mostly damp. I agree with them, that under the peculiar advantages they have in atmospherical respect, the system of surface manuring in the fall, and turning it under in spring, is practical and to advantage, although I contend that, the earlier the manure can be turned under, shallow, the better it is. It certainly is better to have the process of fermenting and decomposition take place under the surface of the soil, then on top. We avoid at the same time any loss by heavy rains, which cannot be prevented, even if the land is perfectly level. Furthermore, as soon as the fresh manure, spread on the surface, has been thoroughly soaked by a rain, its capability for fermenting is gone. Many of our farmers certainly have observed the looseness of their soil several weeks after they have turned under fresh manure, a sign that the fermentation of the manure under the surface of the soil has co-operated with the soil to its benefit. What I have said above is with regard to fresh manure. The article referred to says: "Should the plain, practical farmer want any further proof that there is no loss by fermentation of any of the valuable constituents—what he considers the strength of the manure—the vastly greater effect of, and benefit received from rotten manure, ought to be more than enough for his satisfaction." Has the writer of this article bore in mind, how much fresh manure it takes to procure one load of rotten? Manure, by being put in a pile, loses, in 81 days, 26 7-10 per cent.; in 254 days, 35 7-10 per cent.; in 384 days, 37 5-10 per cent.; and in 393 days, 52 8-10 per cent. Take an average of 37 per cent. lost, before it is applied to the land, and you can make your calculation. By using the fresh manure from the stable, you would have been enabled to manure three times the area as if retained for rotting. I do not pretend to say, that the durability of the fresh manure is equal to rotten, but being enabled to produce as good a crop on thrice the area with fresh manure, the material for manure is increased and you enabled to return it to your soil every other year, whereas, by allowing your manure to rot away, you would not be able to manure oftener than every sixth year. The view taken in the article referred to, about turning under manure, is not correct. It states: "It also appears that when manure is ploughed into the soil, there is comparatively little chance for it to be thus prepared and brought to the plant, but that the roots have to find and use it as they best can. Hence it will be seen that, when manure is ploughed under, the roots of plants cannot as soon, nor as throughly receive the benefit of it, as when diffused through the surface soil by the rains; while being covered with several inches—often six or eight—of soil, there is comparatively little chance for rains to dissolve, bring it to, and diffuse it through the surface soil, where it is *mostly needed*." Now, if it is desired to manure for a crop, the soil has to be well prepared by deep ploughing and harrowing. If this has been done, haul and spread your manure and turn it under, not more than three inches, sow and harrow. The writer is mistaken if he considers manure necessary for the first start of the young grain. The proof of this assertion

you will find by sowing any kind of seed in the most miserable, poor soil. By moisture and atmospherical influence it will germinate and grow quite brisk for a certain period. This proves, that manure is not essential for germinating and the first growth. But as soon the roots require more nourishment than they find in the surface, they will extend downwards in search of it, and find it in the manure turned under. Our object should always be to induce downward tendencies of the roots by manure and subsoil ploughing, as this enables the plants to withstand drought and other hardships. A plant, persuaded by manure to run its roots near the surface, never will have the capacity to endure unfavourable seasons as well as the other. Nevertheless, there are circumstances under which surface manuring is advantageous. For instance, on meadows, not subject to inundation; on young grass after the grain has been removed; and on wheat, if circumstances have prevented manuring before seeding. In the first case there is comparatively a small waste, as meadows generally are moist, and the manure being applied in the fall, the moisture of the ground, and the dampness of the atmosphere combined, retain the greatest part of the fertilizing agents. In the second case, it depends entirely upon the season how much of the fertilizing qualities are retained. Excessive drought will carry off the greater portion by evaporation, but if tolerably wet season sets in, it will be mostly preserved for the young grass. The advantages to the young grass is so great, that we are justified in running the risk. In the third case, it is even desirable on level land, if the wheat is tall enough to cover the ground, and thereby preventing any great waste of the manure by washing. The advantage by surface manuring wheat is, that you are enabled to haul your fresh manure as it is made and spread it. By this process you are enabled to manure a much larger area, and have the benefit of manure produced after seeding. I cannot close my remark on the article without mentioning the final point put forth, "that surface manuring is nature's mode." There are thousands of things, nature's mode, which have been improved by sciences. Nature, and all that is found within the world, was created for the benefit of man. Man was created with endowments above all other creatures, and everything was made subject to his free will and judgment. If we had contented ourselves to follow nature's mode, we would to-day be savages and not a civilized people.

Well, gentlemen, in spite of all my remarks, you will see that I am not all an opponent to surface manuring, if *judiciously* applied, but that I strongly object to this practice, as a *general* thing.

Yours respectfully, L. A. Hansen.

## The Selection of Dairy Cows Again.

*Messrs. Editors:*

The article in your last number, from the American Stock Journal, contains truths about selecting cows, which can be disputed by no man. There is, meanwhile, one thing not mentioned, viz.: the system of Guenon in selecting and judging cows. This system is comparatively *very* little known in our country, and still it is of the highest importance, for everybody who keeps cows, to be familiar with it. Also, in this assertion, I am led by experience. In 1852, the Danish government sent a gentleman of the veterinary department to France, to be instructed on this subject. After returning, the government sent him through the country, from dairy to dairy, to instruct such gentlemen as might desire to obtain information on the subject. I then happened to be travelling in Europe and in Denmark at the time this gentleman made his round. He stopped at a friend of mine, where I was visiting, and during one week made excursions to various other estates where large dairies were kept. It was my good luck to accompany him, and being present at the examination of about five hundred cows. It was, indeed, astonishing to see how close he was able to tell the yield of milk of each cow, according to the signs of the Guenon system. Ever since, I have made this system my guide, and I can say that I *very rarely* have been mistaken. The only trouble is, that it requires considerable study to acquire the necessary knowledge, if every one has to teach himself by book; whereas, if a teacher, master of the subject, was sent by the government through the country to give instructions, any man, with good common sense, by being present at the examination of two or three hundred cows, would be able to gain the knowledge, required for his own private use, in one week.

Our government spends millions in bricks and mortar, and, I think, it might be able to spend a few thousands on a thing of so great importance to our agricultural fellow-citizens.

L. A. Hansen.

Clifton, Fairfax Co., Va., August, 1867.

☞It is said there are 2,548 acres in hops in Sauk county, Wis. Last year there were but 888.

From the North Western Farmer.

## Scientific Farming.

BY R. T. BROWN, A. M., M. D.

In the last chapter we reached the conclusion that the growing crop of vegetation is furnished with the materials of its growth mainly from the decay of previous growths, animal and vegetable. The solid part of this food is stored away in the soil, in the form of compounds soluble in water, but the atmosphere is the storehouse of the larger portion of the material sustaining vegetable life and growth. Either in the form of permanent gases, or of temporary vapors, there flows into this great common receptacle, from the whole organic world, a constant, though not uniform, stream of vegetable food. We will not, at the present, look further into the sources of this common supply, but turning to the plant itself we will consider, for a moment, the conditions most favorable to its appropriating a large share of this common stock of food. Plants take in food at their two extremities—the leaf and the root. A large and healthy leaf surface, and a corresponding root surface, are the conditions of vigorous growth, so far as these relate to the plant itself. The health of the plant, and its ultimate productiveness, demands that the two absorbing extremities should be well balanced; and nature constantly strives to maintain an equilibrium between the extent of leaf surface, and the number and distribution of rootlets. There is really as much difference between a root and the spongiola, or rootlets, by which it terminates, as there is between a stem and a leaf. The measure of root absorption is not so much the aggregate length of root, as the number of terminating roots—for roots in healthy growing plants always terminate in open mouths. There has long been a dispute between practical farmers and theorists, on the subject of the effect of breaking the roots in the cultivation of crops. The farmer insists that in plowing close to his corn, and thus breaking many roots, he greatly promotes the vigor of his crop; but the man of theory tells him that he is destroying the organs by which alone his corn can draw nourishment from the soil, and in the proportion in which he breaks the roots, he is injuring his crop. Now, true science will grasp all the circumstances, and not fail to reconcile the conflict between them. It is true that the first effect of breaking a root is to rob the plant of the use of the mouth at the extremity of the root broken; but nature, ever watchful, rallies her forces to repair the injury, and directly the broken root sends out half a dozen, or more, of lateral branches, each terminating in a rootlet capable of absorbing as much as the one originally destroyed. But it must not be forgotten that this multiplication does not always follow the breaking of roots. If the growth of an annual plant be far advanced it does not readily reproduce its injured roots. About the time when corn begins to joint it has a tendency to throw out long, slender roots. If these be cut at this period of growth, they very readily repair the injury by multiplying themselves, thus adding greatly to the vigor of growth. After the tassel has appeared, roots should be broken with caution. If the season should prove favorable, and August be warm and showery, no injury will result, and even the crop may be benefitted by close plowing at this period of growth; but, on the other hand, if dry, hot weather follows this late plowing, the broken roots will merely heal over, leaving no absorbing surface, and reproducing no new rootlets. Therefore, we may safely conclude, that close plowing, and, consequently, breaking the roots in the early stages of corn cultivation is multiplying the rootlets and thus promoting growth; but late in the season it will always be hazardous.

In the cultivation of fruit trees, or other perennial plants, the same law holds good—root pruning early in the season, multiplies the number of rootlets; but late in the season it has a contrary effect.

But when, by proper attention to the most perfect development of roots and leaf, the farmer has placed his crop in an attitude to draw his full share from this common store of vegetable food, he has not done all that can be done to produce the largest yield from the ground. He may create a local and private supply of his own, or rather he may withhold the products of decomposition arising from the decay of his own plants and animals, from the common stock deposited in the atmosphere for public use.

When speaking of the nature of ammonia and its importance in the vegetable economy, in a former number, we alluded to this subject of absorbing the gases from the atmosphere and retaining them in the soil; but we come now to speak of holding them as private property from the hour of their birth till the growing plants require them. This process is known as COMPOSTING. It consists in placing the waste matter from the barnyard and the house, together with all other animal and vegetable matter that can be conveniently procured, in such a condition as will favor the most rapid decay, and with it place such substances as will either absorb and

hold the products of decomposition, or will chemically combine with them to form compounds that will be permanent and involatile. I well remember the time in Indiana when it was not an uncommon practice to throw out manure around the log stable till it accumulated in such formidable piles, that it became easier to pull down the stable and remove it to some other location than to remedy the difficulty in any other way. Now, however, the thrifty farmer has his "manure heap," to which, from time to time, he contributes the accumulating rubbish of the barnyard, more for the negative purpose of getting it out of the way, and giving a neat and cleanly appearance to the premises, than for any positive good that is to be derived from the manure. From this heap, as decomposition goes on, carbonic acid, ammonia, sulphurated and phosphurated hydrogen, &c., escape in a constant stream, with an odor as rank and villainous as that which offended Falstaff's nostrils.

In this re-arrangement of the organic materials, nitrates, carbonates, and other salts of ammonia and potash are formed, but these being soluble are washed out of the mass by the drenching rains to which the unprotected pile is exposed, till in the end little else remains but the redundent carbon of the organic substances decomposed. This is the "well rotted manure" of which the farmer often speaks. A good absorbent it is—indeed the very best, but in its preparation all the available plant food contained in the original material of the manure heap, has been suffered to go to waste, or at least has been added to the common stock in the air. The process of composting is different in different countries, but the principle involved is the same in all. Organic matter, moistened with water and covered with vegetable mould, or clay loam, will retain all the gases escaping from its decomposition. This is the fundamental principle of preparing composts. A convenient application of this principle is to place a row of posts in the ground so that they will stand about eight feet high and three or four feet apart. About six feet from this and parallel with it place a similar row. Extend these to any convenient length and put a temporary roof over them. Place rough boards loosely against the inner side of each row of posts as you proceed with the construction of your pile. Begin your "heap" by putting in a layer of stable manure, barn yard litter, &c., about a foot deep. If it is not sufficiently wet, moisten it with water, and proceed to haul "swamp muck," (which is nothing more than the black mud from the bottom of any swamp or pond,) and cover the manure to the depth of from ten to fifteen inches with this. Over the muck, lay another foot of manure moistened, and follow it with muck, and so continue on, raising the boards on the sides as the heap goes up, till you have reached the top of the posts. These several layers may be added from time to time as the rubbish accumulates about the barnyard, being careful always to complete the last layer as far as you have material for it, and leave it covered with muck.

The muck should be prepared and hauled in the fall when the swamps are dry, and the material much lighter to haul. If the compost heap consists largely of stable manure, or of animal substance, the covering of muck will be required to be much thicker than if it is litter or straw. If the heap heats much, apply more water, and if there is any bad smell about it, give it more muck, or sprinkle over the manure a little plaster of Paris before you cover it with muck. A small addition of quick lime will hasten the decomposition and add to the value of the compost.

In about six or eight months time, a pile thus constructed will, on cutting through it, present the appearance of a uniform black mass of very high fertilizing power.

### Pet Hawk, to Scare Yellow Birds.

A friend in Chester county, gives us the following notes:

Note 1st.—"Some ten days ago, the little yellow birds made a strong attack on our seed patch, and seemed likely to eat it up. We had a pet sparrow-hawk, which we used to keep birds out of cherry trees. I brought him out and tied him in the patch to a post. A panic and a scattering at once ensued, and never a bird has been seen to eat seed. I apprehend that pet hawk might be very useful to the gardener. The other birds seem to know them very well. The little ones get away in a hurry, but robbins and blackbirds seem disposed to dispute the territory.

Note 2nd.—"Rabbits and ground hogs have been making continuous attacks on our fine cabbage patch.

"The remedy adopted was to tie a useless dog in the patch, and give him there, shelter, food and drink. Results: no more cabbage taken.

Note 3d.—"We had the most perfect bed of cabbage plants I ever heard of, raised along side of our chicken yard, and near the coops where the little ones were raised."—*Practical Farmer.*

☞A soil may contain all the elements necessary for fertility, be sufficiently moist, and still not be fertile unless air have free access.

## Grape Culture.

BY WM. GRIFFITH, OF NORTH EAST, PA.

The primary conditions of successful grape culture, are, a well adapted climate, suitable soil, strong healthy plants, of varieties suited to the particular locality to be occupied, and thorough tillage.

Many other things are important, and by no means to be disregarded; some of which, in order to secure any great measure of success should receive careful attention; but these are altogether indispensable, as experience has abundantly demonstrated.

The isothermal lines indicate with tolerable accuracy, the requisite temperature, and with due deference to different varieties, may be relied upon to determine the boundaries and fix the limits of what may be regarded as grape or wine-growing districts.

It will be borne in mind that these lines are seldom found to traverse the lines of latitude, for any considerable distance, being interrupted and varied by local conditions, as by large bodies of water, altitude, &c., so that, in many instances, they cross lines of latitude at angles quite acute, so as not to be recognized, except by scientific observations; in other cases they are interrupted and diverted suddenly, with variations of several degrees.

Perhaps it may considerably abate the anxiety of some who are about to plant vineyards upon the south shore of Lake Erie, to be reminded that in the application of this test, we are nearly in range with Cincinnati; and I will take occasion here to observe, that additional encouragement is guaranteed by the fact that the rain fall, during the growing season, is at least one fourth less on our lake shore than at Cincinnati, and along the southern boundary of Ohio; and when it is remembered that, except in the very driest seasons, we have here more rain than is desirable, the relative chances of success are seen to be greatly in our favor.

In making these comparisons, I by no means intended to undervalue the Ohio valley as a grape or wine district. My only object is to relieve our own cultivators from their ill-founded apprehensions and misgivings, regarding low temperature, &c. Again, those districts, or sections of country where the health and vigor of vegetation is maintained for the greatest number of days, are, as a general rule, most favorable for growing and ripening the grape.

To maintain the life and vigor of grape foilage for the longest possible period, is the great desideratum in grape culture; and hence those sections of country most favorable to this condition, may be regarded as the grape district.

At the first view, the reader will be likely to conclude that these sections are to be sought for in the Southern States, that, as a matter of course, the country will be found less favorable for grapes as we pass to the north.

But this is by no means the case. Indeed it is so far otherwise as to fix the southern limits of practical grape culture north of the 30th parallel. It is the opinion of the writer, from many years experience and careful observation, that the narrow belt of country lying along the south shore of Lake Erie, will compare very favorably with the best localities on the continent, east of the Rocky Mountains (or west indeed, for that matter) in its adaption to growing grapes.

Thus, while the unseasonable and blighting frost, both late in the spring and early in autumn, is the great terror of our grape growers in Missouri and Southern Ohio we are here so far exempt, as to be almost entirely freed from anxiety. Again, colder periods have been realized at Cincinnati, and even as far south as St. Louis than ever have been registered along our favored "South shore."

Regarding what kind of soil is best adapted to growing grapes, there has been, and still continues to be, a great variety of opinions. On the one hand it is contended that clay soils are always to be preferred, and the stiffer and the heavier the better; while others maintain the superiority of the light soils, and, as if insisting upon the opposite extreme, they tell us the "lighter the soil the better;" while others again, planting themselves (and their vines as well) upon middle ground, prefer a gravelly loam, or shale, with a slight mixture of clay, and *always*, the drifts, to any and all other conditions, or combinations of soil.

But it is worthy of remark, that very satisfactory results have frequently been realized upon every variety of soil, and therefore, by the everywhere recognized rule—"by their fruits, &c.," no composition of soil, as yet occupied, can, as a matter of course, be rejected. The truth is, the nature and condition of the sub-soil, are of far more consequence than the nature or composition of the surface; and as my main object is to impress and instruct beginners, I will take the liberty to add, though perhaps out of place, in a formal discussion of this subject, that atmospheric conditions, aside from temperature, are vastly more important than anything relating to the soil, or the depths below, intermediate or remote. And yet, it must be borne in mind, that a dry soil, or a porous sub-soil, or such thorough

and complete drainage as will allow the water to pass freely from *even* the *lowest roots*, is indispensable. And as this is a condition hard to maintain, or even to secure temporarily, except at an expense absolutely impracticable, upon the stiff clay beds, my own preference is for a lighter soil, and *always* for the drift soils. But more upon this point, when I come to consider the preparation of the soil for planting, &c.

In putting out a vineyard, it is all important to secure *strong*, healthy, well rooted plants. The conditions if "feeble and sickly;" and "vigorous and robust," or healthy; belong as well to the vegetable as the animal kingdom; and when it is considered, that these habits are as often "constitutional" in the one case as the other, the relative value of good and poor plants, or rather the desirableness of the one, and the worthlessness of the other, will be apparent. What farmer does not know, that a two year old steer is less valuable than a yearling of the same size and proportions; and in this respect, only in a greater degree, is a "yearling" more desirable than a two year-old vine.

I have a vineyard, embracing several acres, and planted with five varieties, in about equal proportions, in the spring of 1866—last year *only sixteen* months since, from which, in about fourteen months, I expect to gather grapes enough, at a very moderate price, to pay the entire cost of the land, which was $200 per acre; while a neighbor of mine, planting at the same time, will not get grapes enough to pay for gathering. And just here I will take occasion, most earnestly to invite and urge the neighboring grape growers to call when convenient, and examine this vineyard; and though it may seem like boasting, I will venture to suggest, that it will pay them, even though they may have to step a little out of their way.

In relation to the adaption of varieties to particular localities, or section of country, I observe, that our experience will not warrant a definite determination in all cases, or even generally; nor can we perhaps even expect to be able to satisfy ourselves, in a *majority* of cases, except by that only sure test experimental demonstration. "Try all things" is wisdom's injunction, and one that should be "brought home" to every one about to plant a vineyard to a new variety, or one that has not been fairly tested in his near vicinity.

No grape should be regarded as of any value, for vineyard purposes, when, as a general rule, it does not carry a healthy leaf *throughout the growing season*, and mature both fruit and wood perfectly.

The Catawba is a splendid grape; the Delaware is even better than the Catawba; while I do not hesitate to affirm, that the Iona is better than either. But any and all of them are good, "*very good.*" Plant them, you who are so fortunate as to occupy sections and situations known to be favorable to their productions; but you who are so unfortunate as to be situated outside of the boundaries of "Canaan"—(though as for myself, my Canaan is limited by these lines, and if I was not safely within them, I would "strike my tent" at once and travel; nor should the sole of my foot "find rest" until I reached the "promised land," even though I might "wander in the wilderness" for forty years)—you "Egyptians," plant you only such as Providence has provided, or will approve, be they Isabellas, Hartford Prolifics, Norton's Virginia, Ives' Seedling, or even Concords; and attend *punctually and constantly* to their proper cultivation. Gather in due season (not before) their luscious fruits, eat, drink, and be content; or if you find with the writer, that you cannot be satisfied with *them*, and such as these; why then "rise up quickly" and come to the "south shore," or go to any other place, where the choicest grapes can be grown as successfully, if indeed there be such places; and I for one, shall be happy to learn that there are many, and of great breadth.

The importance of thorough tillage, frequently stirring the surface, and keeping the vineyard entirely free from grass and weeds, it is believed is not very generally appreciated, even by our oldest and most experienced cultivators; and therefore, as I do not design to write lengthy articles, I will omit the discussion of this branch of my subject, for the present.—*Erie Gazette.*

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KEEPING CIDER SWEET.—The Utica Herald states that A. G. Williams, of Hampton, Oneida county, has a method of preserving cider worthy of being generally known. Allow the cider to work until it has reached the state most desirable to the taste, then add grated horseradish in the proportion of a tumbler and a half to the barrel of cider, and shake up well. This arrests further fermentation, and after remaining a few weeks may be racked off in clean casks, and the air excluded by closing the bung. Cider preserved in this way has a pleasant, agreeable flavor.

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TO PROTECT FRUIT TREES FROM MICE.—Strips of old tin, wound around the collars of the trees, have been found a perfect coat of armor, proof against the attacks of mice.

## Cream and Butter.

Cream, as any farmer's wife can tell, is not all butter; every one hundred pounds of cream (not skimmed *too deep*) should yield about one-fourth its weight in butter, one-fourth casein, and one-half whey, sugar, milk, &c. A wine gallon of good cream will weigh about 8½ lbs., and will, or should, give about two pounds of butter. It is owing to the presence of sugar that the cream sours, as nothing can become sour without the presence of more or less sugar.

The next item for consideration is the separation of the butter by churning or otherwise.

The cream consists of small, oily globules surrounded by casein, which prevents them from uniting; when cream is heated these globules expand, burst and rise to the top in the form of butter in a liquid state. These globules will not unite without the presence of an acid; hence cream must always be more or less sour before butter will form. Butter made in this way will keep for an indefinite length of time, but will not, under ordinary temperature become solid.

When the cheese is agitated in a churn, the globules are broken, but at a lower temperature. The proper temperature for churning is from 53° to 55°; at this temperature will come soonest. The temperature will increase from four to ten degrees before the butter begins to form. When whole milk is churned 65° degrees is the proper heat. In either case, if the temperature is too low, it should be raised by boiling water, *put in while the churn is in motion, and poured directly on the cream.* It is better to have the heat a little too low than too high.

Sweet cream may be churned, but requires more labor without improving the butter; in this case the cream must become somewhat acid before the butter will form.

The town of Rennes, in Brittany, is noted for its peculiar butter; the milk of the previous evening is mixed with the warm morning's milk, and the mixture allowed to stand for two or three hours, when the whole is churned. Those who practice this plan claim that they thereby obtain a larger amount of butter of a more delicate flavor.

Near Glasgow, in Scotland, the product of two or three milkings is allowed to stand until the cream rises, say from 12 to 24 hours; all is then poured, and left still, until the mixture is sour. A tough skin is formed on the surface; great care must be taken that this skin does not get broken, for, should the air obtain entrance, fermentation will take place; this will injure the butter and spoil the buttermilk.

In Holland the milk of each milking is allowed to become sour (being repeatedly stirred to prevent the cream from rising to the surface and remaining there,) and as soon as a wooden spoon will stand in it, it is churned.

Fresh churned butter contains 96 per cent. of pure butter, and 16 of the constituents of milk, principally casein.

The number of quarts of milk required to form one pound of butter, varies very much.

Thus, from the *Journal of the Royal Agricultural Society of England*, we find that the average yield of a herd of Ayrshire cows was 1328 qts. per year, and that from 9¼ to 9¾ qts. made one pound of butter. The average of a herd of Kerry cows was 1264 qts., but 8 to 8½ qts. made a pound of butter. In Germany 15 qts. are allowed for a pound of butter.

Johnson estimates that in England, under moderately favorable circumstances, from 18 to 21 lbs. of milk will yield 4 lbs. of cream, which in turn will give one pound of butter. He also states that a good cow should yield annually 3000 qts. of milk, which, if butter be the object, will give 300 lbs. of butter, or one pound per day for the time the cow gives milk.

In Devonshire, a good cow will, for the first twenty weeks after calving, yield 12 qts. per day; this will give a daily yield 1½ lbs. of butter.

In Switzerland a cow is thought good if she makes 40 lbs. during the ninety summer days.

In Germany, the dairyman thinks 100 lbs. is a good annual yield. According to *British Husbandry*, volume II, page 404, 8 to 9 ounces per day for ten months in the year, is considered a good return; so from 160 to 180 lbs. in ten months.

Next comes the consideration of the circumstances which affect the quality of the butter.

It has been proved that cows make the richest butter when they first go out to pasture in the spring; that they produce the hardest butter when fed on dry food; that butter made during the fall is best for keeping.

I have alluded to the difference in the first and last milk drawn; the difference also extends to butter made from the cream rising on this milk; butter made from the cream of the last drawn milk is far superior to that from the first drawn.

In some of the most noted dairies near Glasgow this fact is taken advantage of; the dairyman raise large numbers of calves; these are allowed to suck the first half of the milk, and from the remainder the cream is raised for the production of butter.

The town of Epping is notorious for producing the best and also the *worst* butter in Eng-

land. To gain this doubtful reputation the milk is set away in the usual manner to raise cream. After the milk has stood for eight or ten hours, the cream is taken off and kept by itself; in as many more hours the milk is again skimmed, and the result placed by itself; sometimes a third skimming is practiced. The first cream will produce butter *far superior* to the *best* butter made in the usual manner; it forms the best English butter, and will sell for three times as much as if made from the third lot. The last lot forms an article which is only butter in name. The second lot will produce an article equal to that made in the usual way.

Cream which rises quickly, whether by natural or artificial means, will make much better butter than that which rises slowly. Cream raised at a temperature of 77° makes more butter, of a better quality, than at a lower temperature.

Cream which is sour before it is churned, will make better butter than sweet cream; the cream *must become acid* before the butter will separate. Butter which "comes" quickly is not so good as that which occupies more time. Mr. Ayton, a celebrated English dairyman, says good butter cannot be made from cream with less than one hour and a half's churning. The churning, if continued after the butter has formed, makes the butter soft and light colored, but is said to increase the weight. The cream should never be warmer than 55°, nor colder than 50°, when put in the churn.

The following experiment, with its result, may be interesting to dairymen:

Five equal quantities of cream from the same lots were taken. No. 1 was heated to 50°, and was raised by churning to 60°, churned 4 hours, and gave one pound fifteen and a half ounces for a gallon of cream. No. 2, was heated to 55°, raised by churning to 65°, churned 3¼ hours, gave one pound fifteen and one-sixth ounces per gallon. No. 3, heated to 58°, raised by churning to 67, churned in 3 hours, gave one pound fourteen ounces per gallon. No. 4, heated to 60°, raised by churning to 68°, churned in 3 hours, gave one pound twelve and two-third ounces per gallon. No. 5, heated to 66°, raised by churning to 75°, churned in 2½ hours, and gave one pound ten and a half ounces per gallon.

The butter of Nos. 1 and 2 was rich, firm and well-tasted; No. 3 was good, but softer; No. 4 was soft and spongy; No. 5 was very poor indeed. Each of these lots contained 15 gallons of cream, weighing 8¼ pounds per gallon.

Authorities disagree as to the time which butter should be churned. Ayton gives 1½ hours, with the cream at 50°; Allen and Barclay 3½ to 4 hours, cream at 50° to 55°; Ballantyne 1½ to 1¾ hours, cream at 53°. No doubt exists but that cream at a temperature of from 50° to 55° will make the most butter of the best quality.

Let us now examine into the exact chemical composition of butter.

If fresh butter be heated to 180°, and then washed in warm water, a colorless fluid oil is obtained, which, on cooling, becomes a solid white substance, which when submitted to great pressure is separated into two portions, viz: the solid portion, or *margarine*, and a fluid called *oleine*, or butter oil. Butter made in May contains of margarine 68 per cent., butter-oil 30, butric acid 2 per cent. Summer butter contains more butter oil than winter; the former contains of margarine 40, the latter 65°; the former of butter-oil 60, the latter 35. The margarine melts at 118°; butter heated to or above this point, looses its good qualties as butter. —*Geo. P. Rogers in Germantown Telegraph.*

## The "Midge" and the "Weevil."

The insects above named are quite distinct in their species, form and habits, though frequently confounded with each other, by persons who ought to know better. The "midge" is a popular but incorrect name for the wheat-fly, *Cecidomya Tritici*, which is a small fly resembling the mosquito in form, which appears in wheat fields in the beginning of June, and the females deposit their eggs in the blossoms of the wheat. The eggs hatch in about eight days, and the well known little, yellow maggots make their appearance.

The weevil is a little beetle which belongs to the same family as the curculio which infests the plum tree. It is called *Curculio granarius*, and in its perfect state is a small beetle of a brownish red color, about one-eighth of an inch long. This insect, both in the larva and perfect state, is very destructive to stored wheat, devouring the flour and leaving nothing but the skin or bran. Its powers of multiplication are very great, a single pair being capable of producing six thousand descendants in a single year. The female weevil deposits her eggs on the wheat after it is housed, and when the young grubs are hatched, they immediately burrow into the grain, and as fast as one grain is consumed they go into another, and so on until the time comes when they are to become perfect beetles. They then come out of the wheat in the form of beetles and lay their eggs for another brood. These insects may be effectually destroyed by kiln-drying the wheat.—*Western Rural.*

## Agricultural Reconstruction.

For the moment, material is vastly more important than political reconstruction to the late slave-holding States, and their system of agriculture should be modified to meet the abrupt change in their system of labor. The first change which must occur, and which will eventually prove equally beneficial to all parties concerned, will be the sub-division of landed estates, leading to better cultivation, to an extent to render the fractions each more profitable than the original estate. For the slovenly, careless management of many of the larger Southern plantations, must de substituted the careful thrift of the North, and from the North must be introduced machinery; next, several staple crops, which, though not grown now in the South, can be cultivated to better advantage there than where now located. Among them we will cite four great agricultural interests which are annually looming up into greater importance: dairy products, wool, hops and fruit. While intending to treat each of these subjects in successive numbers, we will, for the present, confine ourselves to the first—the dairy and its products. This interest has assumed vast proportions in New York, Ohio, and other Northern States within the last ten or fifteen years. Oneida and Herkimer counties, for instance, annually convert the milk of 46,000 cows into cheese, and that cheese of a quality to supersede the average English cheese in the English market. The American Dairyman's Association, a large and influential body, sent a first-class man, Mr. Willard, to Europe, to obtain information upon the dairy management of the various countries there, and they issue annually a valuable report of some 130 pages, devoted to their own peculiar interest. The following extract from this report will give some idea of the magnitude of the dairy interest in the State of Ohio:

According to census reports, there were in Ohio, in 1859, 696,309 milch cows, and in 1860 the amount of butter manufactured in the State, according to assessors' returns, was 33,078,750 lbs., and of cheese, 20,788,074 lbs.; but in 1865 the number of milch cows had fallen off to 690,337, and of butter products to 32,554,835 lbs., and of cheese 16,940,213 lbs. Allowing an average of six acres of land for each cow, we have 4,142,022 acres devoted to keeping cows. Calling each cow worth $50, and each acre of land $50, and supposing that for each 15 cows there must be a team and farm implements, &c., of the value of $500, we have:

| | |
|---|---|
| For value of cows | $34,516 750 |
| For value of land | 207,101,100 |
| For teams, implements, &c. | 23,011,000 |
| Total | $264,628,850 |

the amount of capital invested in the dairy husbandry of Ohio, the interest of which, at six per cent., is $1,587,131 per annum.

The value of the butter made in Ohio in 1865, at fifteen cents a pound, was $2,541,047, and allowing one-third of the milk produced in the State to have been consumed in its unmanufactured state, we have a total value of $18,461,245 for the dairy product of Ohio in 1865.

Now, what is most striking to a Marylander, a Virginian, a Carolinian, or indeed to any reader acquainted with what is called the Piedmont country, from the Pennsylvania line to Georgia, in drawing a comparison between the facts, as stated in the above report and as they exist in the South? At the North the superiority of the cows, the high price of the grazing land and the shortness of the season; at the South, inferiority of cows, cheapness of land, and *length* of season. He knows full well there are vast bodies of land much greater than that devoted to the dairy in Ohio, and in some respects under similar treatment, better grass land to be had on an average of five dollars an acre. He knows that where he has to feed cattle in winter one month, they have to be fed any where north of Mason and Dixon's line ten weeks.

Can the Southern country to which we allude breed good cows and produce fine beef? Steenberger, living in the valley of Virginia, near New Market, held for years a monopoly of the beef markets of Baltimore, Philadelphia and New York. George Patterson, on the hills near Sykesville, in Maryland, has had for years a herd of Devons of his own breeding unequalled even in England. As for butter, who has ever tasted in New York anything superior to the Waverley and Hampton butter, or that made in Baltimore and Howard counties, by Howard and Ramsey McHenry? And as for milk, there is not a private dairy on the continent yielding as many gallons per annum as that of Ross Winans in Baltimore.

For an estimate of the cost of cheese-making we recur to the Report of the Dairymen's Association, and give the remarks of Mr. Storms, of Montgomery County, New York: "I suppose the average number of acres in dairy farms is about one hundred and twenty, and these should carry, one year with another, fifteen cows, a span of horses, and other necessary stock. From these cows there should be made 11,500 pounds of cheese, and butter sufficient for the family, if

made at a factory. At eleven cents a pound this amounts to $1725. Add $100 for sale of pork, and we have $1825 as receipts. For expense accounts, we have interest on land at $80 per acre, and $2,000 in stock and machinery—$840; a man at $30 a month, eight months; a woman at $13 a month, sometimes, and an extra hand in haying and harvest, one month, $52; this amounts to $238, leaving $587."

It will be observed here that the land is estimated at $80. The Southern dairymen should then have the advantage of his Northern competitor by the difference of between $5 and $80 in the cost of land, and a grazing season of at least three months longer. We are satisfied that with the Northern system of *combination*—that is, cheese factories judiciously located throughout the mountainous regions of the Southern States—for the manufacture of the milk of whole neighborhoods into cheese, the country would add to its resources another element of almost incalculable wealth.

The object of the writer is not only to open the eyes of his suffering countrymen to a great source of agricultural wealth hitherto neglected, but to show the dairymen at the North who contemplate emigration to other lands, the advantages offered them throughout the whole of the mountain region of the Southern States, and to assure them that the Southern people have one quality left, at least, which has survived the ruin of civil war, and that is hospitality. Any man, be he from Europe, from the Eastern States, or where he may, will be kindly received, and treated according to his deserts.—*Turf, Field and Farm.*

## The Colorado Potato Bug.

As I predicted, this new potato bug is now destroying all our crops this year. I planted where no potatoes had been raised in the field; part of them on last year's corn land, and part on hazel, broke last year. No hiding from the destroying appetite of this insect. All our crop, everywhere, is this year being destroyed by them. Picking by hand is resorted to, and by this process, if those who try it are fortunate enough to get half a crop, will cost them $2 per bushel. The inventive genius of the universal Yankee is called out, and Pitchforth & Benson have patented a machine to *kill the bugs by horse power*. It is constructed with a reel similar to a reaper. This reel runs parallel with the potato row, and knocks the bugs off into a box, the bottom of which is a moving canvass, which passes between two rollers and mashes the bugs with great slaughter.

Notwithstanding all machinery, all patent nostrums, and all kerosene oils, no remedy will save our potato crop. I, last winter, advised the farmers of Michigan and Indiana to plant largely of potatoes, for this whole Mississippi Valley, from St. Paul to Cairo, will have to buy their potatoes or go without. No doubt, some small districts of country in this great northwest, will raise a few, but we must buy our potatoes or go without. We are planting largely of sweet potatoes, but, owing to the lateness of getting them out, we must have a continued wet summer, and dry, warm September, to perfect the crop. We shall resort to many other garden vegetables, but my own taste will prefer the apple and other fruits, to take the place of the potato. Put up largely of canned fruit, including the grape. No better fruit comes on to my table than canned grapes.

Will not this devouring bug eat other vegetation than the potato? Yes, they are as fond of the egg-plant as of the potato. Their next choice is the tomato fruit and vine. Many tomato vines were destroyed last year by them. They ate my cucumber, melon and squash vines some. Predictors say this bug will have its day, and soon pass off. Give me a reason, "show me a sign," and I will believe. I never believe without being able to give a reason for my belief. Will our friends in Kansas, Nebraska, and Western Iowa, please tell us whether they are on the decrease, where they have been five or six years?—*Cor. Northern Farmer.*

"How Doth the Little."—Within the almost boundless sphere of natural history, perhaps there is no one subject more interesting and instructive than that within such a small body as that of the bee there should be contained apparatus for converting the "virtuous sweets" which it collects into one kind of nourishment for itself, another for the common brood, another for the royal, glue for its carpentry, wax for its cells, poison for its enemies, honey for its master; with a proboscis as long as the body itself, microscopic in its several parts, telescopic in its mode of action; with a sting so infinitely sharp that, were it magnified by the same glass which makes a needle's point seem a quarter of an inch, it would yet itself be invisible; and this, too, a hollow tube; that these varied operations and contrivances should be enclosed within half an inch in length and two grains of matter, while in the same small room the large heart of at least thirty distinct insects is contained, is surely amazing in an extraordinary degree.—*American Bee Journal.*

# The American Farmer.

**Baltimore, October 1, 1867.**

**TERMS OF THE AMERICAN FARMER.**

SUBSCRIPTION TWO DOLLARS PER ANNUM.

RATES OF ADVERTISING:

Eight lines of small type constitute a square.

| | 1 *Mo.* | 3 *Mo.* | 6 *Mo.* | 1 *Year.* |
|---|---|---|---|---|
| One Square..... | $2.00 | $5.00 | $10.00 | $15.00 |
| Half Column..... | 8.50 | 20.00 | 35.00 | 60.00 |
| Half Page..... | 15.00 | 35.00 | 60.00 | 110.00 |
| One Page..... | 25.00 | 60.00 | 110.00 | 200.00 |

PUBLISHED BY

WORTHINGTON & LEWIS.

**New Office, 4 South Street,**

Near Baltimore Street,

BALTIMORE.


FINE STRAWBERRY PLANTS.—We are indebted to our friends, Ed. J. Evans & Co, of York, Pa, for a dozen very fine plants of their Napoleon III Strawberry described in our advertising pages. Though delayed accidently, long enough to have gone to any part of the country, we got them finely in excellent order, through the mail, and have planted them with our own hands.

Also from the same, we have beautiful specimens of the Foard Tomato, a superior variety.

RODUNDA ISLAND GUANO.—From Wm. Crichton & Son we have circular descriptive of this comparatively new fertilizer, with strong commendations from chemists and those who have used it. Its low price will commend it to consideration. The Messrs. Crichton have forwarded two barrels of this guano to the Agricultural College with the request that it be fairly tried on the wheat crop.

THE STAR DRILL.—We are sorry to learn that our report of the result of trial of this drill at the college has discouraged some of our friends from using it. We meant simply to say that the condition of the ground at the time allowed no trial at all of the implement, but it stands nevertheless on its merits, as testified in the certificates of its use last year.

☞A correspondent of the Maine Farmer says: "Many a housewife may be glad to know, when she has a piece of fresh meat she wishes to keep a few days, that it can be successfully done by placing it in a dish and covering it with buttermilk. I have practised the plan for years."

What will keep the buttermilk?—AM. FAR.

ADVERTISEMENTS.—We call attention to our advertisements generally, and take pleasure in the fact that, so far as we are able to judge, they are without exception those of reliable and respectable business men. In the departments of fertilizers and of fruit trees, there is ample room to choose from, and every branch of business in which farmers are interested is represented by one or more respectable dealers. We can but express our surprise that so few commission men seem to understand their interests in this respect. Our friends Hewes and Warner, of whom we took occasion to speak some months ago, find it profitable to renew and enlarge their advertisement. They are not content with building up a little business among their personal friends, but by judicious advertising are gathering custom from far off States. They are eminently worthy of confidence.

DRAINING.—A friend in North Carolina gives an animated account of the evils resulting from excessive rains, and asks for information on the subject of draining, and especially as to making drain tile. We will do the best we can to accommodate him next month, but in the mean time, let us say, that where there is difficulty in getting tile, they need not be thought essential. Green poles, of almost any kind, laid two parallel and one on top, so as to secure a free passage of the water, make a good substitute, though not so permanent. They may be laid in lengths of ten feet.

DR. DADD, well known and esteemed as a veterinary surgeon in Boston; author of the "Horse Book," and editor of the Veterinary Journal, published some years ago in the same city, has, we learn from him, taken up his residence in Baltimore, at Miller's Hotel, for the purpose of practising his profession. A veterinary surgeon of skill and science, as we suppose the doctor to be, should be well received, and find ample reward for his services.

FREDERICK COUNTY AGRICULTURAL SOCIETY.—This society purchased last week the lot of ground, containing fourteen acres, belonging to General Edward Shriver, and seven acres of Mr. Falconer, lying in the eastern suburbs of Frederick, Md., for which it paid seven thousand dollars.

AGRICULTURAL FAIR.—The Agricultural and Mechanical Association of Washington county, Md., has determined to hold its fair on the ground of Richard Wise, Esq., a short distance west of Hagerstown. The time fixed is the 15th, 16th, 17th and 18th of October next.

## Our Educators.

Reading and writing come not by nature. Where there is no profession of scholarship, criticism is disarmed. We are well contented, therefore, with the every day good-sense of farmers who dress their thoughts in such phrase as their opportunities and experience have given them command of. Indeed in this regard we claim for ourselves exemption from criticism; for while our teachings of Agriculture and Horticulture are fair game, we profess not Orthography, Etymology and Syntax, beyond that degree that fairly answers our purpose of plain speech to unpretending people.

Shall an *Old Farmer* then presume to be the critic of others? Perhaps not; but as the Father of a family of Young Farmers, he may examine the credentials of their Teachers. In doing this he will not be exacting in the "Ologies," but he will claim that there be exhibited a decent respect for those "proprieties," which he learned *of*, but did not learn, in the "Old Stone School House," where he got Murray's abridged by heart and heartily hated it. "English Grammar," said that authority, "is the art of speaking and writing the English Language *with propriety*." Whether this be a good definition or not, we do not care, but this is what we claim, that our Teachers be at least capable of speaking and writing our English Language. Failing of this, we close the book, and end the examination; such a one cannot teach our Farmer boys.

Prominent among the teachers whom the recent movement in behalf of Public Instruction in Maryland has brought into life is—

*The Maryland Educational Journal*. It comes to us in its early numbers with the *Imprimatur* of the Superintendent of Public Instruction, the Rev. L. VanBokkelen, LL.D., and other gentlemen very prominent in their connection with the Public School System of the State. They are its Editors. It is the "*Organ of the State Board of Education*," and "*Devoted to Popular Instruction and Literature*."

In its latest issue it is announced that for reasons "which we think will be apparent, we have been reluctantly compelled to omit the 'Editorial Committee' names which have appeared on this Journal," and "have entered into an arrangement with that whole-souled, energetic, experienced and popular educator," (most just praise,) "Rev. Dr. C. K. Nelson, of St. John's College."

When we have said that such a Journal was "prominent" among our means of instruction, might we not have added most prominent, and most potent, for good or evil to our reputation without the State for sound learning.

Let us proceed now to examine this Teacher only in our *Farmer* style, going to the beginning and calling attention to a few passages among many, which we have marked in reading.

In the first editorial of first number, among other remarkable thoughts, the writer finds nothing that he can compare with "the grand uniform system of State policy, such as regulates the free schools of Maryland," for a "uniform system of *home* instruction," except perhaps it be the Bible; he assures the teacher that his duties are "*interlarded* with thorns," and closes as follows:

"We live in a progressive age; onward, *upward*, EXCELSIOR! is the cry in all departments of art and science. Man seems to be emulating omniscience. The world is rising in an effulgent blaze of mental glory. Amid this scene of splendid enchantment and misery, the "Maryland Educational Journal" takes its place to battle with error," &c.

This may be fine writing, but the style is not adapted to every day life, and Farmer boys should be warned against it.

"*The Educational Interests of the Age*" is the high sounding topic of an article of three pages, beginning on page 6. The first idea we get here is, that the writer must think the mental discipline of his reader the chief "Educational Interest." He brings our powers of attention to trial at once. He involves his thoughts in unusual words, and his words in hard sentences, and writes altogether, in language, not easily "understanded of the people." All this tends to fix the attention of the (persevering) reader, and when he gets at the thought, there is still something to think about. We must make one or two specimens illustrate, as far as we can, the character of this article both as to matter and manner.

"The system pursued in many of these (educational) institutions is more mechanical than intellectual. They cultivate the memory mechanically in the use of mere words, while the substance of the intellect is almost altogether disregarded. Committing words to memory mechanically is not an intellectual exercise. The memory may be crammed full of words and crippled by the cramming, while the intellect may be untouched, or if affected at all, it may be in sharing the cripple the memory has received by the mechanical process to which it has been subjected."

We have thought that memory is just as truly intellect as judgment or imagination, and that it

could not be said of "committing words to memory," that it is "not an intellectual exercise," nor that in any exercise of it whatever "the intellect is untouched." Nor does it accord with our idea of the human intellect, that any of its movements or powers can be properly compared to a bag or a basket, or the casing that sausages are stuffed in, and so, "crammed," and damaged in the process of cramming; nor would we say of such bag or sausage casing, that it was "crippled," nor of any thing else, that it "shared the cripple."

On page 8, same article, we have the following: "The teacher's office is no sinecure. He or she that undertakes, under such impression, and so intending to work it, may be assured of being most grievously mistaken." That is, the writer first asserts, that the office of teacher is "no sinecure," and then assures us, that whoever undertakes it, under the impression that it is "no sinecure," will find himself "most grievously mistaken."

On page 21, we have an article headed "Educators," which commences thus: "Those creations are not alone educators that rule in our colleges, academies and school houses." The word teacher is defined—"a creation that rules in colleges," &c. In the article previously noticed, it was repeatedly called "the teaching element."

Again, "Nature is a teacher, and we are taught thereby to look through Nature up to Nature's God." She teaches us to look through herself. Nature may be said to be indeed, in some sort, a teacher, but it does not follow that "we are taught thereby to look through nature, &c., any more than we are taught thereby "reading and writing." If there are "sermons in stones," it must be acknowledged they are hard books to read, and only open to cultivated minds.

The leading idea of this article is to call attention to the Baltimore and Ohio Railroad as an "Educator." We learn for the first time that this great enterprise, which it was generally supposed, was designed to develop the material resources and build up the commercial interests of the State, has been "conceived," and is still carried on, for educational purposes, and that John W. Garret, Esq, is perhaps the "Head centre" of the primary school system of the State, and will, no doubt, in the shrewd way that people give him credit for, be associated with Dr. Nelson in editing the Journal. This is a sly proceeding, it must be confessed, in behalf of the education of the masses. If we are mistaken about it, let it be laid to our charge in not comprehending the language of the Journal; here it is: "Hence we have reason to thank the men of enterprise who conceived, and who still carry on among us this great work, *to educate the masses*, for we yet have among us those who need to be educated," &c. &c.

Our limits and time forbid us to dwell longer or make any further note of such passages as we have marked. Let us say, in conclusion, that it is a serious matter to have our educational interests represented abroad in such guise, whatever may be its influence among ourselves. We can well understand, that Dr. VanBokkelen, in his zeal to accomplish a great deal, has given his endorsement to the Educational Journal, in confidence of its becoming a useful instrument for his purposes, and that he has found it impossible to give it that superintendence which the use of his name as editor seemed to demand. If what we have said shall have the effect of bringing its past defects to the notice of the accomplished gentleman who now takes hold of it, in such manner as to command his effective supervision, we shall hope to have a Journal worthy of its high position, and our purpose in making these comments will have been accomplished.

A MOST USEFUL INVENTION.—One of the most useful and important inventions we have seen lately is the Tin-lined Lead Pipe, which will prevent the water passing through it from partaking of the taste of lead in its transmission. Cases of sickness which have occured from drinking water left standing in lead pipes can thus be obviated. The pipe will doubtless be generally adopted. In the pipe to which we allude one-fifth of the tickness is pure block tin, encased in four-fifths of lead, forming a perfect union of the tin and lead, and giving the pipe twice the strength of common lead pipe, while the price is less. Messrs. Colwell, Shaw & Willard, of New York, are the manufacturers.

SECURITY AGAINST FIRE.—The numerous letters received from our friends who suffered loss of books, accounts, valuable papers, &c., during the "fiery ordeal" throughout the South, induce us to draw attention to the advertisement of Mr. L. H. Miller, manufacturer of *Iron Safes*, in this city. We selected one of his make for our new office, believing it to be as good as any in the land.

WISCONSIN AGRICULTURAL SOCIETY.—We are indebted to J. W. Hoyt, Esq., secretary, for an invitation to attend the exhibition of this society at Madison, and also for programme and list of premiums.

## Book Table.

DADD'S THEORY AND PRACTICE OF VETERINARY MEDICINE AND SURGERY, containing the Curative Treatment of diseases of Horses and Cattle, Sheep and Swine, and embracing all the latest information on the Rinderpest and Trichina. By Geo. H. Dadd, Veterinary Surgeon—Author of "Anatomy and Physiology of the Horse," "Modern Horse Doctor," "Cattle Doctor," Professor of Anatomy and Physiology in the Veterinary Institute of Chicago.

This work, of which we have received from the author a copy, contains near eight hundred pages of well printed matter, and is elegantly illustrated. We have not yet had time to examine it as we wish, but cannot doubt that it is a valuable addition to our stores of knowledge, on a most important subject. It is sold only by subscription.

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THE AMERICAN NATURALIST, a popular *Illustrated Magazine of Natural History*, published by the Essex Institute, Salem, Mass.—This is a magazine that fills a want long felt in our serial literature. We have been plentifully supplied with magazines of light literature, and light enough most of it is too, and some of a mixed character containing scientific articles; but these are often so highly popularized, that the science is nearly lost sight of; and then we have a few like *Silliman's Journal*, useful only to the *savans*. But this magazine seems to us to occupy the middle ground where its influence will be to induce the young to study science. The articles are written in plain but scientific language, and its whole appearance is commendable.

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MENTAL AND SOCIAL CULTURE. By Lafayette C. Loomis, A. M., M. D. New York: J. W. Schermerhorn & Co.—This little work is designed as a text-book for schools and academies. The author is the president of the Female College at Wheeling, and he seems to have given much earnest thought to the subject treated of. Many of the chapters are abridged from Dr. Watts' "Improvement of the Mind;" and for maxims and rules of conversation and politeness the author is largely indebted to the writings of Chesterfield. His own views are advanced with clearness, and altogether the work is a valuable compendium.

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BLACKWOOD FOR AUGUST.—Contents, Brownlows—Part VIII, The Social Era of George III, Life and Letters of Governor Winthrop, The Easter Trip of two Ochlophobists, Intemperance and Intolerance, Tevsk, Maximilian, The Chiffoniev, The Bill as it is. From the Leonard Scott Publishing Company, 14 Fulton street, N. Y.

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THE LONDON QUARTERLY REVIEW FOR JULY, 1867.—Contents, New Paris, Cornish Antiquities, Reminiscences of Massimo d' Azeglio, The New Courts of Law, Mountain Climbing, Characteristics of English History, Agricultural Gangs, Hannibal's Passage of the Alps, The Church and her Curates, Reform Essays.

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HISTORY OF THE SOWING MACHINE, by James Parton, as originally published in the "Atlantic Monthly" for May, 1867.—We are indebted to McKenny & Co., No. 17 Sharp street, Agents for Maryland and Virginia of the Howe Sewing Machine, for this interesting publication.

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THE CATAWISSA RASPBERRY.—C. D. Copeland, of Lima, N. Y., writes the Rural New Yorker thus concerning this fruit: "It is now, with us, in its blossoming stage for the autumn crop. This is produced by the canes of this year's growth. The first crop which is on the old canes, continues to redden the bush at this date —Aug. 10th. A gentleman living in the town of Catawissa, Pa., where the bush originated, in a private letter now before me, says: 'In an experiment made by himself, forty hills that were three years old, yielded upon an average, from July until October, weekly, a quart to each hill.'"

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☞We are in receipt of Annual Reports of the President and Secretary and Treasurer of the Mechanics and Agricultural Fair Association of Louisiana for 1867.

Also of Schedule of Premiums, amounting to $20,000, with rules and regulations and programme of proceedings of the Second Grand Fair of the Association, to commence on Tuesday, 19th of November, on their magnificent grounds in the city of New Orleans, to continue eight days.

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☞We are indebted to Wm. McPherson, Jr., Esq., for *Schedule of Premiums* amounting to $25,000, of Seventh Fair of the St. Louis Agricultural and Mechanical Association, to commence on Monday, 7th day of October, and continue six days.

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☞John Mitchell, of Brookfield, Wis., raised forty-two bushels of spring wheat to the acre this year.

For the "American Farmer."

## Hops—What Varieties to Plant.

BY AN OLD HOP GROWER.

It is a well-known fact that almost, if not quite every press and paper, has devoted much time and many columns upon the different varieties of produce of nearly every kind and description, and thousands if not millions of dollars have been spent in attempting to search out the true paths to future success and happiness. In every circle of farmers we hear the question argued, "What varieties of grain is best to sow to insure the largest yield? What variety of potato is most hardy and productive? What varieties of fruit trees to plant?" and so on with farm produce of all kinds.

The gardener is in constant pursuit of the most hardy, productive and valuable varieties of fruits, berries, and vegetables of every description. So with the herdsman—unknown thousands have been spent in searching out the best breeds of cattle, horses, sheep, swine, and fowls. The same may be said of the vineyardist. Innumerable columns have been written upon the different varieties of grapes, to obtain the most hardy, productive and valuable grades, and the most formidable against the attacks of vermin and diseases.

While the pen and press have been nearly silent upon the cultivation of hops, its acreage, use and value has been rapidly increasing.—Whereas, as yet, very little has been said and but few columns, if any, have been devoted in regard to the best variety to be cultivated.

From this neglect, nearly all the inexperienced suppose there is but one variety. To such, this is a sad and fatal mistake. There are as many different kinds of hops as of fruit or grapes, and as liable to the attack of diseases. At the present time the hop crop stands No. 1 among the most saleable and best paying products of the country; and as the vermin are making their attacks upon this noble plant, the future success of the grower will depend entirely upon the selection of the variety that is most formidable against the attacks of its enemies.

In many of the oldest hop growing districts experiments have been made on the different varieties, side by side, and results have satisfactorily proven the English cluster to be far superior in every respect. They are the earliest, rich, hardy, productive and saleable variety known. The average yield of the English Cluster is from eighteen hundred to twenty-five hundred pounds per acre, while the average of others is but from one thousand to fourteen hundred pounds per acre, and of an inferior quality.

I have frequently known whole vineyards of the inferior grades totally destroyed by insects, while the English Cluster stood side by side, without receiving scarcely any perceptible injury.

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BELLEVUE FARM,
Near Amherst Court House, Va.

*Editors American Farmer:*

A communication over the signature of "Ploughman" refers to a Centrifugal Disseminator as an efficient machine for destroying grape vines with sulphur, seeding grain, &c., and suggests that the same might be made a destructive engine of warfare. I have had one of these things, a small affair, buckled to a man, for seeding grain and grass seed, for several years past, but there is great difficulty in seeding a particular quantity to the acre, or an even distribution of seed. The piece of your correspondent reminds me that some years ago an aged and intelligent gentleman of Texas called on me, when on his way to Washington to procure patents for his invention, to which he laid claim. One was this Centrifugal Disseminator as an engine of war for throwing balls, and which he claimed would prove so powerfully destructive as to destroy whole armies at once, and must therefore put an end to all war.

The other was an improved Corn Mill. The improvement to which he laid claim was, in first passing the corn between two steel plates, over the hopper, the inner surfaces were jagged, or rather they were coarse rasps. The corn was rasped into coarse meal, with great rapidity, into the eye of the stones, the latter being only required to round the meal and give to it even fineness.

I never learned whether the gentleman succeeded in turning his inventions to account. He could scarcely have awakened at that day and in this country, any interest in implements of warfare. I would suggest to him that he might just now meet with better success.

I think some invention for even cracking the grains of corn before they pass into the mill stones, would be found an improvement; and the inventor referred to said his idea was suggested by examining the teeth of graniverous animals, intended for this purpose.

W. A. STAPLES.

The "Disseminator" above referred to used to be extensively advertised, but we have heard nothing of it of late. It is so with failures generally, and our correspondent has our thanks

for setting the example of reporting as well failures as successes. Failing of its peaceful purposes, let us hope it may make for peace by a more successful application of its warlike capabilities.—Ed. Far.

*To the Editor of the American Farmer:*

This plant, in full flower, is presented in your office. Will you be so kind as to declare in your next issue if it is the Canada Thistle? If not, what is it? Information will be thankfully received by a subscriber.

The plant left as above is not Canada Thistle, but belongs to the Solanum family, and its common name is Horse-Nettle.—Ed. Far.

## The Profits of Farming.

While the business of Farming in many respects differs from all other business, we have never been able to see that in the general principles on which it is to be conducted, it is exceptional in character, or differs from all other pursuits more than they differ from each other. These differences are in kind, but not in degree. A man may make a successful merchant or an unsuccessful farmer, and *vice versa*, and precisely the same reasons operate in both cases. Success in any pursuit implies first that a man must be interested in it, that he must make himself thoroughly master of it in principle and in practice, and *then* that he must attend to it energetically and perseveringly.

It is utterly impossible to carve doctors and lawyers out of some people, and we know of one person who failed three times as a dry goods merchant, and afterwards succeeded, and became very wealthy, as a machinist. We happen to know of another case, where a person seems to have a *dislike* to green grass and green fields, remaining in Philadelphia as a matter *of choice* through the *whole* of the most sultry season, often remarking "that nothing looks so green and delightful as the red bricks." Let circumstances of any kind place this person in possession of a fine farm, well ornamented, and stocked with the finest cows, sheep, horses, &c., and we should soon hear of farming being very unprofitable,—of the expenses of fencing, of accidents to the live stock, of short crops, and everything working the wrong way. Aversion to a business of any kind is no more certain to result in want of success than is ignorance of the proper way to manage it; and this brings us to the question of why farming has the standing stigma of being, *per se*, unprofitable.

It cannot be disputed that in the United States the high price of labor, no less than its inefficiency, is the great drawback to the business of a farmer. This is greatly lessened, but cannot be wholly superseded, by machinery. There may be said to be two classes who make farming a paying business. The one, born and brought up in the country, accustomed to labor, early rising and abstemious habits, works with and leads his men, thus getting more labor and at a low cost. By *habit*, by *inclination*, and by *necessity*, he has been *taught* to look on the paternal acres as the only source of competency, if not wealth, and as affording the only means of a settlement on arrival at manhood. Every one can point to hundreds of cases like this, in every section of the country, where such beginners, after passing through the ordinary active period of life, have settled down at last in a quiet evening and an abundant competency. These men "started on the shin of beef, and they can afford to finish off on the rib." Money with this class is made and saved, and it is also accumulated by saving. Their own labor and unremitted attention and devotion to business, makes up, and more than makes up, often, for inadequate and unscientific culture. The other class adverted to, who also make money by farming, consists of those who, brought up in the city, have yet a preference for agricultural life. They cannot labor, but they have capital. They invest in good land, and, by draining, liming and manuring, by deep ploughing and thorough culture, raise premium crops. Their live stock embraces the best breeds, and yields the largest products. If their cows and sheep cost some hundreds of dollars each, they also yield a heavy percentage or profit on the investment. A cow costing $350 (a frightful price to many farmers) is considered a very profitable investment, if she produces a calf which is worth $100 at a few weeks old, and also yields $50 to $75 worth of milk and butter per anum.

These men have a *working capital* to expend in the management of their land, and they charge it (the land) with the interest of this capital, and do not saddle the outlay on the annual crop. We know of cases like these where money to a pretty large amount has been invested in such farming, and where it is considered to pay, taking an average of five or ten years, as well as merchandising.

A cow making six pounds of butter only per week would soon be weeded out and sold to the butcher, and 150 bushels of potatoes to the acre, 40 bushels of corn or oats, 20 of wheat, and one and a half tons of hay, would be considered behind the times, and as more adapted to the earlier years of the 19th century, and most certainly

not its last half. These men have been accustomed to keeping regular book accounts with their business, giving it debits and credits for profits and losses, and they decline to grow oxeye daisy, wild carrot and other noxious weeds, because they will not pay, the market for them being always a dull one. For the same reason they consider it rather cheaper to stop the liquid waste from their barnyards than to pay $100 per ton for Peruvian guano.—*Practical Farmer.*

## Experiments in Feeding Cattle.

In England everything connected with agriculture is experimented in, without regard to expense, in every possible way. In no country has the cultivation of the soil been carried to a higher state of perfection, or in which it is more productive, and as an occupation, more lucrative. We always read with pleasure the results of farming, and especially the many experiments which are tried there with a view to discover the most successful and profitable way of conducting the various operations on the farm.

The following experiment in feeding cattle with *cooked* and with *fermented* food, was lately tried upon one of the largest estates. It will be seen that this experiment suggests the importance of great care and caution in feeding, before a decided opinion is adopted in so nice and delicate a subject as the nutrition of animals, the health and constitution of which is so various.

Four heifers were selected, as equal in all respects as possible: and six pigs were also selected, from the same family; each lot was divided by the selection, alternately, of an animal. All were weighed, and at the end of each week during the experiment each animal was weighed.

In the first week of the experiment the fermented food consumed was much less than the other, and the increase of the pigs in live weight is considerable more; and the heifers also seemed to have made rapid advances. The second week, however, changed the scene entirely. Those on cooked food were making steady progress, while those on fermented food had produced scarcely an increase from the preceding week. It was then observed that the bowels of the lot using fermented food had been confined, and had become free in the second. The apparent success in the first week was the result of indigestion and accumulations of undigested matter in the intestines. The experiment continued for twelve weeks—those on cooked food thriving and increasing, the others not. On slaughtering them, it was found that the intestines of the three fed on fermented food were full of worms—thus accounting for their not advancing. There was a difference in the return of the lots of pigs in favor of those fed on cooked food of £1 7 3.

Knowing as we do that there is a considerable difference of opinion among farmers upon this question, the above is submitted to their attention in the hope that they will give us their own views upon the subject, which is one, they will all admit, worthy of consideration.—*Germantown Telegraph.*

## Manuring The Wheat Crop

Manure holds the same relation to the farm that steam does to the engine; it is the force used to accomplish the desired result. Let the one fail in the engine and the wheels stop, let the other be withdrawn from the soil and its useful products rapidly and constantly diminish. If the farmer cannot manure every crop, then he should consider from which he can best afford to withhold the fertilizers. If he designed growing a crop of oats, followed by one of wheat, it would not be wise to apply the manure to the oat crop and give none to the wheat. It would not pay as well; the crop of manure would be sold in a cheap market. So, too, it might be injudicious to manure a crop of potatoes and have none to apply to the succeeding grain. The season in which manure should be applied, the stage of the crop, and the depth at which it should be placed, are also topics which the farmer should think much about. Many consider that if manure is only buried in the soil it is enough, no matter whether it be deep or shallow, whether the subsoil be firm or leachy, if the manure is in the earth the crops, they argue, will get the full benefit of it—some time or another. But this is not always true, and it is certainly more scientific and profitable farming to apply manure—not to increase the general fertility of the soil with a view to benefiting several crops in succession—but to directly augment the yield of a specified crop. This course will bring the most profit, for products which command the highest prices are thus largely increased.

Doubtless most farmers will assent to the assertion that the wheat crop needs manure as much as any other one, and pays as well for its liberal application. But the profits of this operation may be greatly varied by the manner in which it is done. Plowing in manure deeply will not give as good results as placing it on, or just under, the surface. It is less labor for the farmer to plow in the manure, for it is easier to haul it on a hard surface than over freshly plowed ground. And then it is out of the way of the

harrow and the drill; but when buried deep it does not nourish the young plant in its first growth, and impart to it strength and size to endure the approaching winter. Nor does it mulch the surface and protect the tender plants from heaving frosts and blighting winds. The rains in their descent wash the soluble elements downwards and away from the searching roots. Surface manuring reverses these processes, and is more rational and productive of more immediate and visible results.

Well fermented farm-yard manure is good enough for any crop, and the best manure for all, but the trouble is we can't get enough of it. Whether the wheat grower can afford to purchase and use fertilizers is a question which he must settle by experiment and observation. Lime may often be used with great profit; plaster is beneficial in some seasons, and salt returns a liberal profit if sown on land rich in humus. Fertilizers for the wheat plant should be applied before the seed has germinated, as a general rule at least before the spring growth begins. The preferable time is just before sowing.)

## New York Nurseries.

The nurseries which are situated along the line of the New York Central Railroad, have been long famed as among the most extensive in the country, and in the world. This railroad ships more trees by far than any other line. At Rochester and Syracuse, and intermediate points, about four thousand tons of trees were distributed during the autumn of 1866 and the spring of 1867—one year's sales. The following statement of these shipments, from the principal points, was furnished us by W. G. Lapham, superintendent of this division of the road:

| | | |
|---|---|---|
| From Rochester | 2449 | tons. |
| " Fairport, (Penfield nurseries) | 108 | " |
| " Macedon | 151 | " |
| " Newark | 92½ | " |
| " Lyons | 20 | " |
| " Syracuse | 210 | " |
| " Geneva | 751 | " |

The quantities shipped at other places, will probably run up the amount, on the whole line, to five thousand tons—the net value of which would be about a million dollars, and the number of trees probably over five millions. In addition to this amount, large quantities are shipped at Rochester by the Genesee Valley Railroad to the Erie road, and by steamer to Canada; at Geneva by steamer south; and at Syracuse by the Syracuse and Binghamton, and by the Syracuse and Oswego railroads. The question naturally occurs—Will not such a vast number soon supply the whole country, with all the orchards and trees needed, and the market become overstocked? The answer is, emphatically, No. There are at least a million farms in the whole United States, and if all the other nurseries are equal in extent to those already mentioned, which may be the case, then there are only ten trees annually, each, for these farms. A farmer wants a hundred apple trees, and a hundred more others of different sorts, for a fair family supply of fruit. Twenty years would be required, therefore, for even this moderate supply, provided every tree lived and grew well. Under present management, we are sorry to say, not one-half ever reach successful bearing—thus prolonging the designated period to forty years—by which time, as an average, the whole will need renewing. It may be, therefore, laid down as a fact, that the present entire extent of nurseries in the United States, is required for supplying the natural decay, to say nothing of planting new orchards on unoccupied lands.

In the preceding estimate, it is intended to give merely the average plantings for a general supply—although in actual practice, many landowners raise large orchards for furnishing fruit to those who have none. By bringing village and city population into the account, a larger supply will of cours be needed.—*Co. Gent.*

## Heading off the Curculio.

In a recent number of the Ohio Farmer there was an account of a meeting of the Cincinnati Horticultural Society, at which a letter was read from P. S. Bush, of Covington, Ky., detailing his method of heading the curculio from the plum trees. It consists in removing the turf from around the trees, if any there be, over a space somewhat larger than that covered by the top or branches, and covering the ground half an inch thick with marble dust, leached ashes, blue clay, or gravel well composted or beaten down. This forms a coating impenetrable to worms and insects. The experiments tried were confined to the gravel and marble dust, used singly, but the other materials mentioned, it is supposed, will answer the purpose. Trees, upon ground thus prepared, have borne a full crop of plums ever since. J. W. Rust, residing also in Covington, saves his plums by burning tobacco stems under the branches of his trees every morning. He was induced to do this by noticing the fact that a plum tree, under whose shade he was accustomed to enjoy his pipe daily, produced a fine lot of fruit, while all the rest cast theirs from the action of the curculio. Acting on this hint, he fumigated his trees with the smoke of burning tobacco stems, and saved his plums.—*Rural New Yorker.*

## "Golden Fleece."

Our United States neigbors have long overlooked the merits of the long-wooled and mutton breeds of sheep, and have given the greasy little Merinoes a monopoly of their affections Latterly, however, a gratifying change of opinion has been observable, and here and there enterprising sheep-men have begun to patronize the Cotswolds, Leicesters and Downs. The foundation of a number of flocks has been laid, and we expect in a very few years that Canadian flockmasters will have to mind what they are about, or they will find themselves outdone by their spirited neighbors, in the breeding of long-wooled sheep. Among those who deserve honable mention in this connection, is Mr. John D. Wing, "Maple Shade" farm, Washington, Dutchess Co., New York. This gentleman has got together a fine flock of Cotswolds, consisting of selected animals from the best flocks of thoroughbred sheep in England. They are strictly pure, without a cross, and every sheep has a reliable pedegree. Mr. Wing has neither spared expense nor trouble, his object being to form a flock of choice blood, second to none in the world. Most of the sheep composing his flock were bred by Mr. Wm. Lane, of Broadfield, a name that stands among the highest on the list of breeders on the Cotswold Hills. Others of these choice animals were supplied by Messrs. Garne, of Aldsworth, Hewer, of North Leach, and Fletcher, of Andoversford, all of whom are known as careful and successful breeders. Along with his imported sheep, Mr. Wing brought over an experienced Cotswold shepherd, who has charge of the flock.

The sheep from this flock have never been shown that they have not carried off the highest honors, and the prize ram "Golden Fleece," was shown at the New York State Fair at Saratoga last year, where he won the first prize, also at Dutchess County Fair with the same result, and at the Auburn Fair of the New York State Sheep Breeders' and Wool Growers' Association in May, 1867, when, after taking the first prize in his class, he won the sweepstakes prize. He sheared on this last occasion twenty pounds of wool. He was bred by Mr. Wm. Lane, sired by "Cotswold King"—the highest priced Cotswold sheep ever sold, viz: $1260 in gold—and his dam was winner of the prize of the Royal Agricultural Society of England. He is the stock ram, being used in the flock at present, and his lambs are very promising.

Mr. Wing's farm, "Maple Shade" is at Washington, Dutchess Co., N. Y., about six miles from Dover Plains on Harlem Railroad, and sixteen miles from Poughkeepsie on the Hudson River Railroad.—*Canada Farmer.*

## Winter Wheat—Drilling & Manuring.

Observation, during the past year, has more strongly confirmed our belief that drilling is preeminently the best method of sowing winter wheat. Frequent freezing and thawing during the late winter and early spring months does more damage to the wheat crop through the country, than all other causes of harm combined. Drilling wheat in a proper manner is the best within immediate and general reach of farmers to counteract this evil. The drill covers the seed at a uniform depth, and it should leave the soil crowning between the rows of grain; this little ridge is a protection against the cold winds, the lightest snows lodge behind it on the crowns of the plants, and when the ground thaws, the soil works from it downward to cover the roots of the wheat a little deeper. Other advantages resulting from drilling over the method of hand-sowing, are, a saving of time, the cultivation the drill gives the land—equal to one harrowing—exactly the desired quantity of seed per acre sown, and scattering it evenly. We may add that the work is finished as the drill passes along, which is some importance in case a heavy rain comes on.

We are equally well convinced from observation that when manure is applied to winter wheat, the best way is to put it on the surface, or incorporate it, by using the harrow or gang-plough, with two or three inches of the top soil. In this position, it affords winter protection to the grain, and the soluble parts are readily taken up by the roots of the plants. The best results to the grain crop will be derived from the surface application of manure, and if grass follows, as it generally does, that, also, will receive the most immediate benefit. We have seen very large crops of grass taken this season from land of doubtful quality, the result of heavy surface manuring on the preceding winter grain. Manure ploughed under deeply is like a rich subsoil; it is a good thing to underlie a farm, but it costs some labor and takes time before the crops receive the full benefit of it.

One reason, we think, why manure is so often ploughed under, is the greater labor involved in drawing it on the field after it is broken up; sometimes the manure is so coarse as to obstruct the harrow or drill if on the surface. But it is easy to spread the manure from the unploughed on to the ploughed ground, if it is in small piles and uniform rows.—*Rural New Yorker.*

## Preparation of Land for Wheat.

Much wheat is lost every year by being heaved out by frost. This seldom happens except in light soils, or in land in which the seed has been sown so late in the Fall that it had not time to become firmly rooted before vegetation was checked by frost. Shallow ploughing is frequently the cause of wheat being heaved out, also the stagnant water of undrained soils, for the roots cannot penetrate deep enough to draw up those ingredients which are necessary to sustain the plants, or to acquire a firm hold on the soil. Soil saturated with water expands considerably in freezing, and in doing so, fractures the roots of plants, and loosens their hold on the soil. Wheat is never heaved out in land which has been thoroughly drained, and deepened by subsoiling across the drains.

Heavy clay lands have generally been denominated "wheat soils," yet some of the most abundant crops of this grain have been raised on sandy soils, which have been properly tilled and enriched by manure. Previous to the introduction of the turnip into the husbandry of England, stiff, clay soil was alone thought suitable for the production of wheat, and it was ameliorated by fallowing and frequent ploughings, &c. The introduction of turnips produced a complete revolution in the system of cropping. Naked fallows disappeared and a regular system of rotation of crops has been established, by means of which the land is manured evenly, and weeds and destructive insects are banished. Soils so light as to come under the denomination of "blowing sands" have been consolidated by growing turnips, and folding the sheep to eat them on the fields; their trampling and droppings being sufficient to make a light soil tenacious. Heavy, tenacious soils have been ameliorated by drainage, the adoption of the drill system of husbandry, and rotation of crops.

Wheat delights in new soil, but it is necessary that the roots of the grasses and other plants should be decomposed, in order to prevent their growth, and to furnish food to the wheat plants. Land that has been for sometime in tillage and then laid down in good heart, and allowed to remain for a few years in grass, when broken up again will generally produce a better crop of wheat than "wild soil," that is soil which has never produced a cultivated crop. Nitrogenous manures are best suited for wheat. Professor Johnston proved this in his "Lectures on Agricultural Chemistry." If we take a wheat plant and examine the composition of the flour it contains, as raised on different soils, and from the application of different manures, it will be found that its gluten, which contains a large percentage of nitrogen, is invariably increased by the increased proportion of nitrogen in the manure.

The composition of wheat varies greatly according to many circumstances, such as soil, manure, climate, variety, time of sowing, and time of harvesting, &c. The following analysis by Sprengel may be taken as an average: 100,000 parts dry wheat contains 1,717 of ash or inorganic matter; the same quantity of wheat straw contains 3,518 parts of ash. They consist of the following substances:

| | Grain. | Straw. |
|---|---|---|
| Potash | 225 | 20 |
| Soda | 240 | 29 |
| Lime | 96 | 240 |
| Magnesia | 690 | 32 |
| Alumina | 26 | 90 |
| Silica | 400 | 2870 |
| Sulphuric acid | 50 | 37 |
| Phosphoric acid | 40 | 170 |
| Chlorine | 10 | 30 |
| | 1777 | 3518 |

One hundred parts of wheat, in its natural state, contains, according to Gregory, the following ingredients:

| | |
|---|---|
| Albumen | 3 0 |
| Gluten | 9 9 |
| Starch | 55.7 |
| Gum, dextrine, pectine and sugar | 4 6 |
| Fibre and Husk | 11.9 |
| | 82.31 |

According to another analysis by the same chemist, the parts were thus divided:

| | |
|---|---|
| Water | 12.9 |
| Organic matter | 85.2 |
| Ash | 1.9 |
| | 99.01 |

We may understand the properties of a manure, and yet not apply it properly. If we make use of an abundance of ammonical manure, the stem and leaves of the wheat plant will become so large and succulent that the roots will not be able to support them, they will fall down and fail to produce a crop. We must endeavor to remedy this evil, by making use of a manure that will give strength to the stem as well as weight to the grain.

It has been well established by repeated analyses that silica forms a considerable part of the straw of wheat, and that potash and phosphoric acid exist in the grain, and a certain portion of lime in both straw and grain. It is evident that the soluble silica which is absorbed by the straw, should be given back to the soil by turning the straw into manure, instead of selling it in the markets. One cause of the deterioration of the wheat crop is the removal of the straw without compensating the soil for the ingredients which have been absorbed by it.

Wood ashes contain a considerable quantity

of potash, and therefore are well calculated to increase the weight of the grain of wheat which contains a large proportion of potash in its composition. If all the ashes which are made in the house, and on the farm, were carefully collected, spread over the wheat field, and harrowed in with the seed, a large increase in the acreable produce would be the result.

Lime imparts health and vigor to the stem, and a portion of it should be applied to soil intended for wheat. It is useful for correcting acids which are injurious to the roots of plants, assists in dissolving silica, and the phosphates, and in various ways improves the strength and vigor of the wheat plants. A small quantity of lime mixed with muck or rich soil, will have a much better effect as manure, than a larger portion without the addition of any other substance. Professor Johnston says: "Lime acts in two ways on the soil, it produces a mechanical alteration which is simple and easily understood; but it is the cause of chemical changes which are really obscure, and are, as yet, susceptible of only partial explanation." A good crop of wheat cannot be obtained from a soil that is deficient in lime, and on this account every grower of wheat should make arrangements for applying this indispensable manure.

Common salt is a useful manure, and a portion of it should always be applied directly, or indirectly, to the soil intended for wheat. Lime and salt have a much more powerful effect when applied in combination, than when either is given singly. Liebig says, "common salt enables a plant to extract sulphur from the ground, where it had existed as sulphate of lime." The grain of the cereal crops may be much improved in size and color by the judicious application of salt. It acts well in conjunction with ammoniacal manures, the salt giving weight and solidity to the grain, while the size and luxuriance of the plant are increased by the ammonia. Immense crops of wheat have been raised by the application of salt and barn-yard dung. A farmer in England obtained ninety-six bushels of wheat from one acre of land, by using a manure composed of salt and well decomposed farm yard manure.

☞In reply to a correspondent who asks, Can good wine be made from grapes grown at the North? the editor of the American Journal of Horticulture says: We very much doubt it. What are or have been called native wines are fixed-up stuff—grape juice and water sweetened, not wine.

## Wheat Bread.

Our whole process of converting wheat into bread has, at almost every step, violated the laws of nature and disregarded her suggestions, and the reform must be a fundamental one. Wheat is, beyond all dispute, the most perfect article of human food, it being the only vegetable production yet discovered that contains all the elements necessary for the nourishment of the muscle, bones, fatty tissue and brains, in just the right proportions. Beans, peas, Indian corn, and the other grains afford perfect nourishment for all the organs but the brain, by which term is included the spinal marrow and the nerves, which branch from the brain, and are identical in composition with it, the whole forming one system or set of organs. Now the pabulum of the brain is phosphorus, whose life-giving fire thrills along the nerves, and whose light illumes the chambers of the mind—for could we rightly understand the correspondences between the material and the spiritual, we might see that light in the intellectual sense was something more than a mere figure of speech. The wear of the brain by study or any mental effort throws off the phosphorus which is found with other waste matter in the urine or other secretions. To keep the brain healthy and in working order the waste must be restored by the use of food containing phosphorus, and that food is wheat.

It would seem as if wheat was made for brain food, and man, the only animal that works with his brain, is the only consumer of it. But by a strange caprice, the promptings of his intuitions are overruled by his tastes, and in this particular instance, to his great detriment, nearly every particle of this brain-nourishing phosphorus is found in the hull or bran of the wheat, which, when separated from the flour, for the sake of merely gratifying the eye with the sight of white bread, carries with it all the superiority which wheat possesses over a dozen other kinds of cheaper vegetables. In addition to this, the mechanical action of the bran on the internal organs keeps them in a healthy state, and supersedes the necessity of pills and other cathartics which many people are obliged to use habitually. This matter of making flour of the whole wheat, is well understood and approved by every school of physicians, and through their recommendation to their patients, and the teachings of health journals, its use is becoming somewhat common, and wheat flour, as it is called, is a staple article in the markets.

Strong as the prejudice may be at first against the brown, plebeian-looking loaf, it will vanish in most cases at the first taste, if the bread is

well made from well ground wheat of a good quality, the sweet, fragrant, nutty flavor commending itself to every taste not wholly vitiated. With wheat flour the complaints of heavy, sour and insipid bread would vanish forever, as it is so light, owing to the feathery particles of the hull which pervade it, that no yeast or alkali is necessary to raise it, but it is, when mixed with pure cold water alone, absolutely self-rising to a greater extent than fine flour can be rendered by yeast. Again, no less than thirteen per cent. of the flour is saved by dispensing with yeast, as the fermentation in its growth converts that proportion of the starch and sugar into alcohol. This is saved, of course, by the use of an alkali and acid to generate carbonic acid, but a deleterious neutral salt is, in every case, left in the bread—tartrate of soda, if cream of tartar is used; lactate of soda, if sour milk, and mellassate, if molasses. The best and most entirely innoxious mode of raising fine flour for those who will use it, is to use muriatic acid, which forms with soda common salt, which is needed in the bread, and is a constituent of the human body.

## Beet Sugar in Illinois.

A consignment of over twenty-seven thousand pounds of Illinois sugar is on its way to this city from the beet sugar manufactory of the Germania Sugar Company at Chatsworth, Livingston county, Ill. This is a portion of the product of the past season's business. Most of this sugar, and perhaps all of this consignment, was made in March last, from beets which had been kept in the pits during the winter. This fact is noteworthy as indicating the richness in saccharine of the beet produced in this country, and the length of the manufacturing season as compared with that of the beet sugar countries of Europe; for there the beet so deteriorates in value after the first to the middle of February as to seriously affect the season's profits.

Of the ultimate success of beet sugar manufacture in this country, there is no reasonable doubt. The beets can be grown as well and as cheaply as in Europe. Repeated analyses show that they are as rich in sugar as those produced in Europe. The past year's experience has demonstrated that they contain no elements which render their reduction to sugar more difficult or costly than the European growth beets. The obstacles which prevented the full realization of results anticipated from the crop of 1866 were purely mechanical, and will be removed before the first of September, when the manufacturing season for 1866 opens. Six hundred acres of beets were planted this spring and are in splendid condition and growing finely. When ready to harvest, the manufacture will commence. The experience of the past season has educated the raw, inexperienced operatives the company were compelled to employ, and the means of success which attended the past season's operations warrants the highest hopes of success the coming year. We regard the receipt of this sugar product of our Illinois prairies in this city the inauguration of an era in our city's commercial history quite worthy to be celebrated in type. It is not many years ago that our grain and lumber trade had an equally modest beginning; and we predict that within three score years Illinois will produce and export more sugar than any State in the Union. And it will be beet sugar.—*Chicago Republican.*

## How to Rent a Farm.

The correct way to arrive at a fair price for both parties is the following: Add the value of the cultivated land and buildings to the value of the stock and tools. If a renter has no benefit of woodland, the growth of timber, and increasing value of the land, will be an equivalent for the interest on it. Now, if a renter agrees to pay the proprietor, annualy, six, seven, eight, or more per cent. on the aggregate of stock, implements and farm, and keep the soil in a good state of fertility, and make certain improvements every year, the proprietor will receive a better compensation than the renter. A renter could not make a decent profit on many farms, were he to hire them at six per cent; while on others he could afford to pay twelve per cent. The productiveness of the soil must be taken into the account. Then, the per centage must be lessened, in proportion as a renter makes improvements that will increase the value of the farm. If he rents a farm on a term of years, and certain improvements will benefit him as well as the proprietor, each one should share in the expense.

A written contract between the parties should require the renter to adopt a rotation of crops adapted to the soil; to allow nothing to be carried off the farm that would make manure: to allow no manure to be wasted by remaining in heaps from year to year; to keep the stock good; to keep all tools, implements and buildings in good repair, making allowance for their natural wear, and not to damage fruit or ornamental trees in any way. The prices at which every thing is valued in different localities render it quite inconsistent to do anything further than simply make suggestions on important points, by which a fair contract for both parties may be framed.

When a farm is worked on shares, the proprietor should so frame the contract that hay straw, cornstalks and other coarse material shall not be carried off the soil; and he who works it should make and apply a given amount of manure annually. If foreign fertilizers are applied, the proprietor ought to sustain a small portion of the expense, if he receives a share of the grain. The contract should not allow a man to plow up the entire farm at one time, so that there will be no grass the next season, either for pasture or meadow.—*Working Farmer.*

## Rye as a Farm Crop.

This grain is little cultivated in regions well adapted to those more valuable and of more general use. It belongs more properly to cold, heavy highlands, where Indian corn is in yearly danger from frosts at both ends of the season, and grass is the main crop. If grown exclusively for the grain it is an unpleasant and somewhat expensive crop to handle, on account of the bulkiness of straw, and the grain itself does not bring a comparatively high price in the market. But the straw is far more valuable than that of any of the cereals. The farmer has many uses for it. For thatching purposes it excels, and a roof of this material well put on, will last twenty-five or thirty years. Why should not farmers use straw roofs in preference to expensive ones, or humbugging patent rights? Rye straw is excellent for cutting and mixing with more nutritious food, and for many purposes around the farm it is convenient. It makes cheap and good protection for fruit trees. But the paper makers will pay the most money for it, and farmers will find it profitable to grow rye straw to supply their demands wherever paper mills are in operation within convenient distances. The Utica Herald gives some information respecting the value of rye straw in the central part of this State, which we copy:

"The making of white printing paper from rye straw was commenced at Fort Edward, N. Y., in 1857. At that time, rye straw could not be procured in sufficient quantities to keep one mill running. It takes two tons of straw for a ton of paper. The farmers began to grow the crop in Washington and Saratoga counties, and now ten large mills are in operation, using in the aggregate fifteen thousand tons annually. The straw at these mills, for the past five years, has averaged less than fifteen dollars per ton, and two hundred and twenty-five thousand dollars are brought into these counties for straw alone. Then there is the value of the grain. It was a poor farming district before the introduction of rye growing, and now the farmers are making good incomes. The mills at Herkimer are now using six tons of rye straw per day. Matthew Smith, of Frankfort, grew last year on an acre of land and from two bushels of sowing, forty-seven bushels of rye, for which he got one dollar and twenty cents per bushel, and two tons of straw which were sold at twenty-four dollars. This makes eighty dollars and forty cents as the yield from one acre, which may be considered a very profitable crop. Probably the farmers of Herkimer would find it to their advantage to grow rye in connection with the dairy. The Herkimer mills are using two thousand tons of straw annually, and are forced to get their supply from Schenectady. It comes in bales. Rye straw is worth from twenty-four to thirty dollars per ton in New York city, and is of ready sale. At the mills East they pay twenty dollars per ton for it. The business is confined to the States of New York, Massachusetts, Pennsylvania, Maryland, Delaware and Illinois. Nine-tenths of the printing paper made of straw is produced in New York."

We give the above from the *Rural New Yorker* as an offset to what was said last month on rye as a grain crop. It was as a grain crop against wheat, and for grain districts, where straw is not merchantable, that our remarks were intended to apply.

BARNS.—We should like to preach a sermon to all our parishioners on barns. We think they need a sermon on this subject—and it should be enforced in a positive style. There should be no milk-and-water sentiments or opinions uttered on a subject of so much importance to every Western farmer. Millions of dollars are wasted every year by the want of good barns. Grain and hay are stacked in the fields, and exposed to the storms of the seasons, and damaged materially thereby. The waste and destruction thus caused would pay more than 25 per cent. interest on every judicious investment of money in barns on every farm in the West. They are indispensable appendages.—*Exchange.*

☞The increase of live stock in Australia has so outgrown the requirements of the population that an influential meeting of squatters of the Riverine districts was held at Demliquin in May, at which it was resolved to establish at Hay, on the Murrumbidgee, a joint stock establishment capable of boiling down ten thousand sheep a week.

## Sunday Reading.

Alone must every son of man meet his trial-hour. The individuality of the soul necessitates that. Each man is a new soul in this world, untried, with a boundless possible before him. No one can predict what he may become, prescribe his duties, or mark out his obligations. Each man's own nature has its own peculiar rules, and he must take up his life-plan alone, and persevere in it in a perfect privacy with which no stranger intermeddleth. Each man's temptations are made up of a host of peculiarities, internal and external, which no other mind can measure. You are tried alone, alone you pass into the desert, alone you must bear and conquer in the agony, alone you must be sifted by the world. There are moments known only to a man's own self, when he sits by the poisoned springs of existence, "yearning for a morrow which shall free him from the strife." Oh, it is then when human advice is unavailable that the soul feels what it is to be alone.

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Satan would seem to be mannerly and reasonable, making as if he would be content with one half of the heart, whereas God challengeth all or none; as indeed He hath most reason to claim all, that made all. But this is nothing but a crafty fetch of Satan, for he knows that if he have any part, God will have none, so the whole falleth to his share alone. My heart, when it is both whole and at the best, is but a strait and unworthy lodging for God. If it were bigger and better, I would reserve it all for Him; Satan may look in at my doors by a temptation, but he shall not have so much as one chamber-room set apart for him to sojourn in.

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An evil man is clay to God, wax to the devil. God may stamp him into powder or temper him anew, but none of His means can melt him. Contrariwise, a good man is God's wax, and Satan's clay: he relents at every look of God, but is not stirred at any temptation. I would rather bow than break to God; but for Satan or the world I would rather be broken in pieces with their violence, than suffer myself to be bowed unto their obedience.

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God is Lord of my body also, and therefore challengeth as well reverent gestures as inward devotion. I will ever, in my prayers, either stand, as a servant, before my master, or kneel, as a subject to my prince.

It is a wonder how full of shifts nature is, ready to turn over all good purposes. If we think of death she suggests secretly, "Tush, it shall not come yet;" if of judgment for sin, "this concerns not thee, it shall not come at all;" if of heaven and our labor to reach it, "trouble not thyself, it will come soon enough alone;" address thyself to pray, "it is yet unseasonable, stay for a better opportunity;" to give alms, "thou knowest not thine own future wants;" to reprove, "what needest thou thrust thyself into wilful hatred?" Every good action hath his let: he can never be good that is not resolute.

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It is good to make a jest, but not to make a trade of jesting, Jest not with the two-edged sword of God's word. Will nothing please thee to wash thy hands in but the font? or to drink healths in but the church chalice? Let not thy jests like mummy, be made of dead men's flesh. Abuse not any that are departed, for to wrong their memories is to rob their ghosts of their winding-sheets. Scoff not at the natural defects of any which are not in their power to amend. Oh, 'tis cruelty to beat a cripple with his own crutches. No time to break jests when the heart strings are about to be broken.

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I never loved those salamanders that are never well but when they are in the fire of contention. I will rather suffer a thousand wrongs than offer one; I will suffer a hundred rather than return one; I will suffer many ere I will complain of one, and endeavor to right it by contending. I have ever found that to strive with my superior is furious; with my equal, doubtful; with my inferior sordid and base; with any, full of unquietness.

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A man under God's affliction is like a bird in a net, the more he striveth the more he is entangled. God's decree cannot be eluded with impatience. What I cannot avoid I will learn to bear.

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I find that all worldly things require a long labor in getting, and afford a short pleasure in enjoying them. I will not care much for what I have; nothing for what I have not.

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I care not so much in anything for multitude as for choice. Books and friends I will not have many: I would rather seriously converse with a few than wander amongst many.

**Large Auction Sale of Alderney Cattle and Trotting Horses,** to take place OCTOBER 10th, at the THREE TUNS STABLES, Baltimore. About 20 COWS and HEIFERS and 3 YOUNG BULLS of pure breed and best pedigree. Catalogues can be had of the publishers.

BENJ. W. WOODS, M, D.,
Govanstown, Md.
oct WM. C. WILSON, Springvale.

☞ **Maryland Agricultural and Mechanical Association** —The annual meeting for the selection of officers of the Maryland State Agricultural and Mechanical Association will be held at the office of the society, 69 West Fayette street, on THURSDAY, 31st October, at 8 o'clock P. M. By order of

WM. DEVRIES, *Prest.*
B. H. WARING, *Gen'l Sec'ry.* 1t

## Baltimore Markets, Sept. 21, 1867.

COFFEE.—Rio, 15a18¼ cts. gold, according to quality Laguayra ——, and Java ——.

COTTON.—We quote prices as follows, viz:

| *Grades.* | *Upland.* | *Gulf.* |
|---|---|---|
| Ordinary | 20 | — |
| Good do | 22 | — |
| Low Middling | 23 | — |
| Middling | 24¼ | — |

FERTILIZERS.—Peruvian Guano, $82; California $70; Rodunda Island $30; Patapsco Co's $60; Reese & Co's Soluble Pacific Guano, $65; Flour of Bone, $60; G. Ober's (Kettlewells) AA Manipulated, $70; A do. $60; Ammoniated Alkaline Phosphate, $55; Alkaline Phos. $45; Baltimore City Company's Fertilizer, $40; do., Flour of Bone, $60; do., Ground Bone, $45; do., Poudrette, $20; Baugh's Raw-bone Phosphate, $56; Maryland Powder of Bone, $50; Rhodes' Super Phosphate, $55; Lister's Bone Super-Phosphate $55; Andrew Coe's Super-Phosphate of Lime, $60;—all per ton of 2,000 lbs.; Pure Ground Plaster, $13.50a$14.00 per ton, or $2 50 per bbl. Shell Lime, slaked, 6c., unslaked, 10c per bushel, at kilns.

FLOUR.—Howard Street Super and Cut Extra, $9 25a 9.50; Family, $12.50a13.00; City Mills Super, $9.25a 9.50; Baltimore Family, $14.50a15.

*Rye Flour and Corn Meal.*—Rye Flour, new, $8.25a 8.75; Corn Meal, $6 50.

GRAIN.—*Wheat.*—Good to prime Red, $2 50a2.75; White, $2.50a2.80.

*Rye.*—$1.40a1.45 per bushel.

*Oats.*—Heavy to light—ranging as to character from 65 a70c. per bushel.

*Corn.*—White, $1 20a1.30; Yellow, $1 30a1.35 per bushel.

HAY AND STRAW.—Timothy $22a24, and Rye Straw $20 a$22 per ton; Oat $15a17.

PROVISIONS.—*Bacon.*—Shoulders, 14¼a15 cts.; Sides 16¼a18¼; Hams, plain bagged, 19 cts.; sugar cured, 23a 24 cts. per lb.

SALT.—Liverpool Ground Alum, $2.25a2 30; Fine, $3.00 a$3.20; Turk's Island, —a— cts. per bushel.

SEEDS.—Timothy $3a3.25; Clover $8.75a 9; Flax 2.75 a3.

TOBACCO.—We give the range of prices as follows:

*Maryland.*

| | |
|---|---|
| Frosted to common | $—a — |
| Sound common | 4.00a 4.50 |
| Middling | 7.50a 9.00 |
| Good to fine brown | 10 00a15.00 |
| Fancy | 17.00a25 00 |
| Upper country | 3.00a30.00 |
| Ground leaves, new | 3.00a5.00 |

*Ohio.*

| | |
|---|---|
| Inferior to good common | 3.00a 6.00 |
| Brown and spangled | 6.00a12.00 |
| Medium to fine red and spangled | 8.00a20.00 |
| Fine yellow and fancy | 20.00a30.00 |

WOOL.—We quote: Unwashed, 27a29 cts. per lb.; Tub-washed, 37a40 cts.; Fleece 35a42 ct5.; Pulled 25a32 cts. per lb.

CATTLE MARKET.—Common, $4.75a5 25; Good, $6.00a 7.00; Prime Beeves, $7 00a8.00 per 100 lbs.

*Sheep*—$3.00a4.00. Lambs $2.50a4 00 per head. Stock Sheep $2 00a3.00 per head.

*Hogs*—$10.00a10.75 per 100 lbs., net.

## Wholesale Produce Market.

*Prepared for the American Farmer by* HEWES & WARNER, *Produce and Commission Merchants, 67 Exchange Place.*

BALTIMORE, September 21, 1867.

BUTTER.—Western so id packed 20 to 28; Glades, 25 to 30; Goshen, — to —.

BEESWAX—38a40 cts.

CHEESE.—Eastern, 16a18; Western, 14a15.

DRIED FRUIT.—Apples, 5 to 6; Peaches, 10.

EGGS—18a22 cents per dozen.

FEATHERS.—Live Geese, 60 to 80 cents.

LARD.—Western, 13¾a14¼; City rendered, 14¼a15 cts.

TALLOW.—10a11 cents.

POTATOES.—$2 00a3.00 per barrel.

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